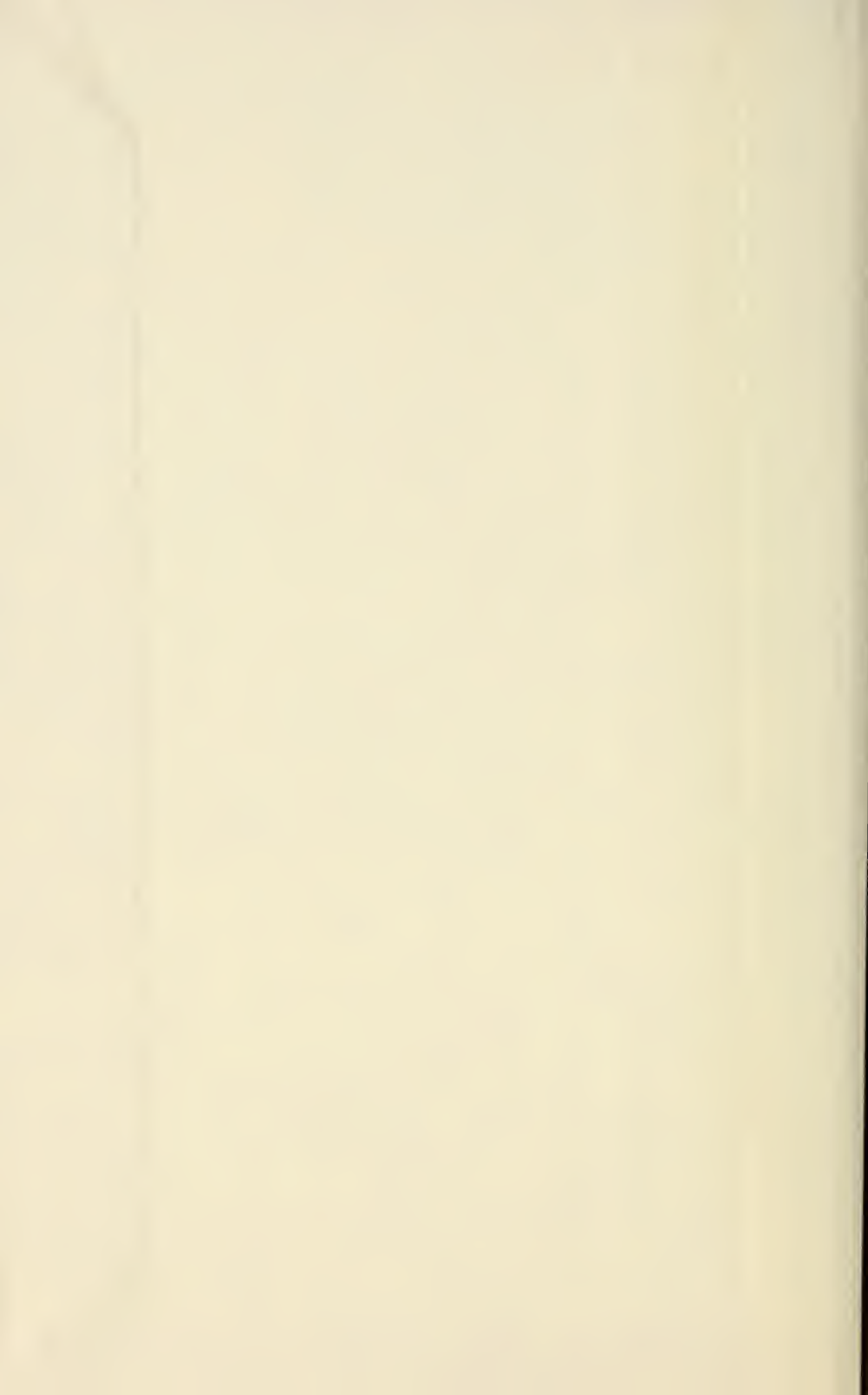






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Catalog and

117th Announcement

The School of Pharmacy

(Maryland College of Pharmacy, 1841 to 1904)

1960-1961



VOLUME 40, NUMBER 1

School of Pharmacy

636 West Lombard Street

Baltimore 1, Maryland

This catalog includes information applying to the terminal three years of the Four Year Program in Baltimore as well as the new Five Year Program which is mandatory in September 1960.

1960

1961

JANUARY 1960							JULY 1960							JANUARY 1961							JULY 1961						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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31							31														30	31					
FEBRUARY							AUGUST							FEBRUARY							AUGUST						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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28	29						28	29	30	31				26	27	28					27	28	29	30	31		
MARCH							SEPTEMBER							MARCH							SEPTEMBER						
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APRIL							OCTOBER							APRIL							OCTOBER						
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MAY							NOVEMBER							MAY							NOVEMBER						
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JUNE							DECEMBER							JUNE							DECEMBER						
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26	27	28	29	30			25	26	27	28	29	30	31	25	26	27	28	29	30		24	25	26	27	28	29	30
																					31						

ACADEMIC CALENDAR

1960-1961

First Semester

1960

September 12	Monday	.....	Sophomore Registration—9:00-10:00 a.m. Junior Registration—10:30-11:30 a.m. Senior Registration—1:30-2:30 p.m.
September 13	Tuesday	.....	Graduate Registration—9:00-11:00 a.m.
September 19	Monday	.....	Instruction begins with first scheduled period
November 23	Wednesday	.....	Thanksgiving recess begins at close of the last scheduled period
November 28	Monday	.....	Instruction resumes with first scheduled period
December 20	Tuesday	.....	Christmas recess begins at close of last scheduled period

1961

January 3	Tuesday	.....	Instruction resumes with first scheduled period
January 25-31	...Wed.-Tues.	.....	First semester examinations

Second Semester

February 7	Tuesday	.....	Sophomore Registration—9:00-10:00 a.m. Junior Registration—10:30-11:30 a.m. Senior Registration—1:30-2:30 p.m.
February 8	Wednesday	.....	Graduate Registration—9:00-11:00 a.m.
February 13	Monday	.....	Instruction begins with first scheduled period
February 22	Wednesday	.....	Washington's Birthday, Holiday
March 30	Thursday	.....	Easter recess begins at close of last scheduled period
April 4	Tuesday	.....	Instruction resumes with first scheduled period
May 22-26	Monday-Friday	...	Senior final examinations
May 26-June 1	...Friday-Thursday	..	Second semester examinations
May 30	Tuesday	.....	Memorial Day, Holiday
June 10	Saturday	.....	Commencement

All students are expected to complete their registration, including the payment of bills and filing of class cards, on the regular registration day. Students failing to comply with this regulation are charged a fee of five dollars. No student is normally permitted to register after Saturday noon of the week in which instruction begins.

The offices of the Registrar and Cashier are open daily, Monday through Friday, from 9:00 a.m. to 4:00 p.m.

CORRESPONDENCE

All correspondence prior to entrance to the upper three years of the Four Year Program in the School of Pharmacy should be addressed to the Director of Admissions, Building 520R, Lombard and Greene Streets, Baltimore 1, Md.

All correspondence prior to entrance in the Pre-professional Program of the Five Year Program should be addressed to the Director of Admissions, University of Maryland, College Park, Md.

Correspondence relating to the following topics should be addressed to the respective departments in care of the School of Pharmacy, 636 West Lombard Street, Baltimore 1, Maryland:

Alumni Affairs, Business Matters, Catalogs and Brochures,
General Matters, Gifts and Bequests, Public Relations,
Housing of Students (Baltimore), Scholarships (Baltimore),
Scholastic Standing of Students (Baltimore), Transcripts of
Records (Baltimore), Vocational Placement.

VISITORS

Visitors are welcome at the School of Pharmacy in Baltimore. The Dean's Office is open Monday through Friday from 9 a.m. to 5 p.m. and on Saturday by appointment.

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	<i>Term Expires</i>
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McCormick and Company, 414 Light Street, Baltimore 2	
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The National Grange, 1616 H Street, N.W., Washington 6	
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The Baltimore Institute, 10 West Chase Street, Baltimore 1	
HARRY H. NUTTLE <i>Treasurer</i>	1966
Denton	
LOUIS L. KAPLAN <i>Assistant Secretary</i>	1961
5800 Park Heights Avenue, Baltimore 15	
C. EWING TUTTLE <i>Assistant Treasurer</i>	1962
907 Latrobe Building, Charles and Read Streets, Baltimore 2	
RICHARD W. CASE	1967
Commercial Credit Building, 300 St. Paul Place, Baltimore 2	
THOMAS W. PANGBORN	1965
The Pangborn Corporation, Pangborn Blvd., Hagerstown	
THOMAS B. SYMONS	1963
Suburban Trust Company, 6950 Carroll Avenue, Takoma Park	
WILLIAM C. WALSH	1968
Liberty Trust Building, Cumberland	
MRS. JOHN L. WHITEHURST	1967
4101 Greenway, Baltimore 18	

Members of the Board were appointed by the Governor of the State for terms of nine years each, beginning the first Monday in June.

Members of the Board appointed to serve after June 1, 1960 are limited to two consecutive seven-year terms.

The President of the University of Maryland is by law, Executive Officer of the Board.

The State law provides that the Board of Regents of the University of Maryland shall constitute the Maryland State Board of Agriculture.

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B.A., University of Texas, 1932; M.A., 1932; B.LITT., Oxford University, 1936;
D. PHIL., 1936.

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B.S., University of Maryland, 1938; M.S., 1939; PH.D., 1948.

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B.S., State Teachers College, California, Pa., 1934; M.A., Ohio State University, 1936;
PH.D., 1942.

ALVIN E. CORMENY, *Assistant to the President, in Charge of Endowment and Development*

B.A., Illinois College, 1933; LL.B., Cornell University, 1936.

FRANK L. BENTZ, JR., *Assistant, President's Office*

B.S., University of Maryland, 1942; PH.D., 1952.

Emeritus

HARRY C. BYRD, *President Emeritus*

B.S., University of Maryland, 1908; LL.D., Washington College, 1936; LL.D., Dickinson College, 1938; D.SC., Western Maryland College, 1938.

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MYRON S. AISENBERG, *Dean of the School of Dentistry*

D.D.S., University of Maryland, 1922.

VERNON E. ANDERSON, *Dean of the College of Education*

B.S., University of Minnesota, 1930; M.A., 1936; PH.D., University of Colorado, 1942.

RONALD BAMFORD, *Dean of the Graduate School*

B.S., University of Connecticut, 1924; M.S., University of Vermont, 1926; PH.D., Columbia University, 1931.

GORDON M. CAIRNS, *Dean of Agriculture*

B.S., Cornell University, 1936; M.S., 1938; PH.D., 1940.

RAY W. EHRENSBERGER, *Dean of University College*

B.A., Wabash College, 1929; M.A., Butler University, 1930; PH.D., Syracuse University, 1937.

NOEL E. FOSS, *Dean of the School of Pharmacy*

PH.C., South Dakota State College, 1929; B.S., 1929; M.S., University of Maryland, 1932; PH.D., 1933.

LESTER M. FRALEY, *Dean of the College of Physical Education, Recreation, and Health*

B.A., Randolph-Macon College, 1928; M.A., 1937; PH.D., Peabody College, 1939.

FLORENCE M. GIPE, *Dean of the School of Nursing*

B.S., Catholic University of America, 1937; M.S., University of Pennsylvania, 1940; ED.D., University of Maryland, 1952.

LADISLAUS F. GRAPSKI, *Director of the University Hospital*

R.N., Mills School of Nursing, Bellevue Hospital, New York, 1938; B.S., University of Denver, 1942; M.B.A. in Hospital Administration, University of Chicago, 1943.

IRVIN C. HAUT, *Director, Agricultural Experiment Station and Head, Department of Horticulture*

B.S., University of Idaho, 1928; M.S., State College of Washington, 1930; PH.D., University of Maryland, 1933.

ROGER HOWELL, *Dean of the School of Law*

B.A., Johns Hopkins University, 1914; PH.D., 1917; LL.B., University of Maryland, 1917.

WILBERT J. HUFF, *Director, Engineering Experiment Station*

B.A., Ohio Northern University, 1911; B.A., Yale College, 1914; PH.D., Yale University, 1917; D.SC. (HON.), Ohio Northern University, 1927.

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B.S., Arkansas State Teachers College, 1938; M.S., University of Tennessee, 1945; PH.D., Pennsylvania State University, 1953.

FREDERIC T. MAVIS, *Dean of the College of Engineering*

B.S., University of Illinois, 1922; M.S., 1926; C.E., 1932; PH.D., 1935.

PAUL E. NYSTROM, *Director, Agricultural Extension Service*

B.S., University of California, 1928; M.S., University of Maryland, 1931; M.P.A., Harvard University, 1948; D.P.A., 1951.

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PH.B., University of Chicago, 1917; M.A., 1918; PH.D., 1925.

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B.A., Emory University, 1919; M.A., University of Chicago, 1928; PH.D., 1930; Diplome de l'Institut de Touraine, 1932.

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B.S., University of Idaho, 1924; M.S., 1925; M.D., University of Louisville, 1929; PH.D., (HON.), University of Louisville, 1946.

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B.A., University of Maryland, 1930; M.S., 1931.

University of Maryland

THEODORE R. AYLESWORTH, *Professor of Air Science and Head, Department of Air Science*

B.S., Mansfield State Teachers College, 1936; M.S., University of Pennsylvania, 1949.

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B.A., University of Chicago, 1940.

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B.A., University of Minnesota, 1944.

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B.A., University of Maryland, 1938.

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B.A., University of Maryland, 1932; M.A., 1934; C.P.A., 1939.

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A.B., University of Maryland, 1930.

LESTER M. DYKE, *Director of Student Health Service*

B.S., University of Iowa, 1936; M.D., University of Iowa, 1926.

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B.S., Maryland State College, 1920; M.S., University of Maryland, 1926.

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B.S., University of Maryland, 1943.

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B.A., University of Maryland, 1926; M.A., 1928.

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B.A., University of Massachusetts, 1941.

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B.S., University of Maryland, 1927; E.E., 1931.

HOWARD ROVELSTAD, *Director of Libraries*

B.A., University of Illinois, 1936; M.A., 1937; B.S.L.S. Columbia University, 1940.

ADELE H. STAMP, *Dean of Women*

B.A., Tulane University, 1921; M.A., University of Maryland, 1924.

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B.S., University of Maryland, 1933.

Division Chairmen

JOHN E. FABER, JR., *Chairman of the Division of Biological Sciences*

B.S., University of Maryland, 1926; M.S., 1927; PH.D., 1937.

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B.S., Northwestern University, 1921; M.A., 1923; PH.D., Cornell University, 1929.

WILBERT J. HUFF, *Chairman of the Division of Physical Sciences*

B.A., Ohio Northern University, 1911; B.A., Yale College, 1914; PH.D., Yale University, 1917; D.SC., (HON.), Ohio Northern University, 1927.

CHARLES E. WHITE, *Chairman of the Lower Division*

B.S., University of Maryland, 1923; M.S., 1924; PH.D., 1926.

ADOLF E. ZUCKER, *Chairman of the Division of Humanities*

B.A., University of Illinois, 1912; M.A., 1913; PH.D., University of Pennsylvania, 1917.

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B. OLIVE COLE, *Professor Emerita of Pharmacy Administration*
PHAR.D., University of Maryland, 1913; LL.B., 1923.

Professors

*GAYLORD B. ESTABROOK, *Professor of Physics*
B.S. IN CH.E., Purdue University, 1921; M.S., Ohio State University, 1922; PH.D., University of Pittsburgh, 1932.

NOEL E. FOSS, *Professor of Pharmacy*
PH.C., South Dakota State College, 1929; B.S. IN PHARM., 1929; M.S., University of Maryland, 1932; PH.D., 1933.
Registered Pharmacist—South Dakota, New York, Maryland.

CASIMIR T. ICHNIOWSKI, *Emerson Professor of Pharmacology*
PH.C., University of Maryland, 1929; B.S. IN PHARM., 1930; M.S., 1932; PH.D., 1936.
Registered Pharmacist—Maryland.

†W. ARTHUR PURDUM, *Professor of Hospital Pharmacy*
PH.C., University of Maryland, 1930; B.S. IN PHARM., 1932; M.S., 1934; PH.D., 1941.
Registered Pharmacist—Maryland.

*A. W. RICHESON, *Professor of Mathematics*
B.S., University of Richmond, 1918; A.M., The Johns Hopkins University, 1925; PH.D., 1928.

DONALD E. SHAY, *Professor of Microbiology*
B.S., Lebanon Valley College, 1937; M.S., University of Maryland, 1938; PH.D., 1943.

FRANK J. SLAMA, *Professor of Pharmacognosy*
PH.C., University of Maryland, 1924; PH.C., 1925; B.S. IN PHARM., 1928; M.S., 1930; PH.D., 1935.
Registered Pharmacist—Maryland.

*Teachers detailed from the College of Arts and Sciences to the Baltimore Branch of the University.

†Part time.

University of Maryland

Associate Professors

BENJAMIN FRANK ALLEN, *Associate Professor of Pharmacy*

B.S. IN PHARM., University of Maryland, 1937; PH.D., 1949.

Registered Pharmacist—Maryland.

NORMAN J. DOORENBOS, *Associate Professor of Pharmaceutical Chemistry*

B.S. IN CHEM., University of Michigan, 1950; M.S., 1951; PH.D., 1953.

EDWARD J. HERBST, *Associate Professor of Biological Chemistry,
School of Medicine*

B.S., University of Wisconsin, 1943; M.S., 1944; PH.D., 1949.

*FRANCIS M. MILLER, *Associate Professor of Chemistry*

B.S., Western Kentucky State College, 1946; PH.D. Northwestern University, 1949.

IDA MARIAN ROBINSON, *Associate Professor of Library Science*

A.B., Cornell University, 1924; B.S.L.S., Columbia University School of Library Science, 1944.

GUILFORD G. RUDOLF, *Associate Professor of Biological Chemistry,
School of Medicine*

B.A., University of Colorado, 1940; M.S., Wayne State University, 1942; PH.D., University of Utah, 1948.

Assistant Professors

*ADELE B. BALLMAN, *Assistant Professor of English*

A.B., Goucher College, 1926; PH.D., The Johns Hopkins University, 1935.

*LESLIE C. COSTELLO, *Assistant Professor of Zoology and Physiology*

B.S., University of Maryland, 1952; M.S., 1954; PH.D., 1957.

ARTHUR J. EMERY, JR., *Assistant Professor of Biological Chemistry,
School of Medicine*

B.S., Bucknell University, 1947; PH.D., University of Rochester, 1954.

HILDA E. MOORE, *Assistant Professor of Library Science*

A.B., Randolph-Macon Woman's College, 1936; A.B.L.S., Emory University Library School, 1937.

*CLAIRE STRUBE SCHRADIECK, *Assistant Professor of Foreign Languages*

A.B., Goucher College, 1916; PH.D., The Johns Hopkins University, 1919.

RALPH F. SHANGRAW, *Assistant Professor of Pharmacy*

B.S. IN PHARMACY, Massachusetts College of Pharmacy, 1952; M.S., 1954; PH.D., University of Michigan, 1959.

Registered Pharmacist—Vermont, Massachusetts.

*Teachers detailed from the College of Arts and Sciences to the Baltimore Branch of the University.

Instructors

EARL F. BECKER, JR., *Instructor in Microbiology*

B.S., Muhlenberg College, 1951; M.S., George Washington University, 1957.

ANN VIRGINIA BROWN, *Instructor in Biological Chemistry, School of Medicine*

A.B., Goucher College, 1940.

*†CLARENCE T. DE HAVEN, *Instructor in Speech*

A.B., Western Maryland College, 1930; M.A., The Johns Hopkins University, 1950.

GEORGIANNA S. GITTINGER, *Instructor in Pharmacology*

A.B., Hood College, 1912; M.A., University of Virginia, 1924.

ROBERT J. KOKOSKI, *Instructor in Pharmacognosy*

B.S. IN PHARM., University of Maryland, 1952; M.S., 1956.

Registered Pharmacist—Maryland.

CHARLES S. KUMKUMIAN, *Instructor in Chemistry*

B.S., Temple University, 1944; M.S., 1951.

Registered Pharmacist—Maryland, Pennsylvania.

DEAN E. LEAVITT, *Instructor in Pharmacy Administration*

B.S. IN PHARM., University of Maryland, 1954; M.S., 1957.

Registered Pharmacist—Maryland.

PHILLIP J. LEVINE, *Instructor in Pharmacy*

B.S., Rhode Island College of Pharmacy, 1955; M.S., University of Maryland, 1957.

Registered Pharmacist—Maryland, Rhode Island.

Lecturer

JOSEPH S. KAUFMAN, *Lecturer in Pharmacy Administration*

B.A., University of Maryland, 1950; LL.B., University of Maryland, 1953.

Visiting Lecturers

SAMUEL L. FOX, *Visiting Lecturer in Physiology*

PH.G., University of Maryland, 1934; B.S. IN PHARM., 1936; M.D., 1938.

ENNIS C. LAYNE, JR., *Visiting Lecturer in Physiology*

B.S., George Washington University, 1950; M.S., 1953; PH.D., 1955.

Fellows

LONDON W. BURBAGE, *Bristol-Myers Fellow in Pharmacy Administration (Research)*

PH.B., Medical College of Virginia, 1909; PH.G., 1910.

*Teacher detailed from the College of Arts and Sciences to the Baltimore Branch of the University.

†Part time.

University of Maryland

CONRAD P. DORN, JR., *American Foundation for Pharmaceutical Education Fellow in Chemistry*

B.S. IN PHARM., University of Maryland, 1958.

ROBERT E. HAVRANEK, *Noxzema Foundation Fellow in Chemistry*

B.S. IN PHARM., Columbia University, 1956.

Registered Pharmacist—California, Maryland, New York, Florida.

HATIF H. JALIL, *U. S. Public Health Service Fellow in Chemistry*

PH.CH., Royal College of Pharmacy and Chemistry, Iraq, 1952; M.S., University of Maryland, 1955; PH.D., 1957.

KENNETH A. KERRIDGE, *U. S. Public Health Service Fellow in Chemistry*

B. PHARM., Chelsea College of Science and Technology, London, England, 1951; PH.D., 1955.

VITHALBBAI C. PATEL, *U. S. Public Health Service Fellow in Chemistry*

B. PHARM., L. M. College of Pharmacy, Gujarat University, India, 1956; M.S., University of Maryland, 1959.

HARKISHAN SINGH, *U. S. Public Health Service Fellow in Chemistry*

B. PHARM., Punjab University, 1950; M. PHARM., Banaras Hindu University, 1952; PH.D., 1956.

*MURRAY C. SPEAR, *American Foundation for Pharmaceutical Education Fellow in Chemistry*

B.S. IN PHARM., University of Maryland, 1959.

Registered Pharmacist—Maryland.

C. RICHARD TAMORRIA, *The H. A. B. Dunning Research Fellow in Chemistry*

B.S., Georgetown College, 1954; M.S., 1957.

MU-TSU-WU, *Research Chemist*

B.SC. IN CHEMISTRY, 1951, National Taiwan University.

Junior Instructors

NAGINDAS K. PATEL, *Junior Instructor in Pharmacy*

I.SC., Bharatiya Vidya Bhavan's College, 1952; B.PHARM., L.M. College of Pharmacy, India, 1954; M.S., Temple University, 1957.

Registered Pharmacist—India.

ARVIND P. SHROFF, *Junior Instructor in Chemistry*

B.SC., M. S. University, Baroda, India, 1954; M.S., Duquesne University, 1958.

Graduate Assistants

JOHN W. BECKER, *Assistant in Pharmacy*

B.S. IN PHARM., University of Maryland, 1959.

Registered Pharmacist—Maryland.

*Resigned February 12, 1960.

*STANLEY L. BECKER, *Assistant in Zoology*
B.S. IN PHARM., University of Maryland, 1959.
Registered Pharmacist—Maryland.

**MELVIN CHAIET, *Assistant in Chemistry*
B.S. IN PHARM., University of Maryland, 1959.
Registered Pharmacist—Maryland.

WILLIAM J. FINN, *Assistant in Pharmacology*
B.S. IN PHARM., Albany College of Pharmacy, 1959.
Registered Pharmacist—Vermont, Maryland.

CARL L. HEIFETZ, *Assistant in Pharmacology*
B.S. IN PHARM., University of Maryland, 1957.
Registered Pharmacist—Maryland, District of Columbia.

*CHARLES F. HOOPER, JR., *Assistant in Physics*
B.A., Dartmouth College, 1954.

EDWARD MARLOWE, *Assistant in Pharmacy Administration*
B.S. IN PHARM., Columbia University, 1956; M.S., 1958.
Registered Pharmacist—New York, Maryland.

EUGENE C. REIER, *Assistant in Pharmacy*
B.S. IN PHARM., University of Maryland, 1958.
Registered Pharmacist—Maryland.

THEODORE H. T. WANG, *Assistant in Chemistry*
B.S., Mukden Medical College, China, 1949; M.S., University of Nebraska, 1958.

Assistant

JAMES P. CRAGG, JR., *Assistant in Practical Pharmacy*
B.S. IN PHARM., University of Maryland, 1943.
Registered Pharmacist—Maryland.

Library Staff

Pharmacy-Dentistry

IDA MARIAN ROBINSON, *Librarian*
A.B., B.S.L.S.

HILDA E. MOORE, *Associate Librarian*
A.B., A.B.L.S.

BEATRICE MARRIOTT, *Reference Librarian*
A.B.

*Teachers detailed from the College of Arts and Sciences to the Baltimore Branch of the University.

**Resigned January 31, 1960.

University of Maryland

EDITH M. COYLE, *Periodicals Librarian*

A.B., A.B.L.S., M.A.

MARJORIE E. VILK, *Cataloguer*

B.S. IN ED.

MARIE MARTIN, *Library Assistant*

SARAH L. ATKINS, *Library Assistant*

JACQUELINE B. CLEM, *Assistant to the Librarian*

PATRICIA B. POTTER, *Assistant to the Cataloguer*

Assisting Staff

DAISY LOTZ GUE, *Secretary-Stenographer*

MARGARET E. BEATTY, *Senior Stenographer*

FRANCES R. PLITT, *Senior Stenographer*

*JUDITH A. SHOUSE, *Senior Stenographer*

*Effective February 2, 1960.

THE SCHOOL OF PHARMACY

History and Program

THE PURPOSES OF THE SCHOOL OF PHARMACY are to train students for the efficient, ethical practice of all branches of pharmacy; to instruct students in general scientific and cultural subjects so that they can read critically, express themselves clearly, and think logically as members of a profession and citizens of a democracy; to guide students into productive scholarship and research for the increase of knowledge and techniques in the healing arts of pharmacy.

The Maryland College of Pharmacy, the oldest pharmacy school of the South, was organized on July 20, 1840 by a progressive group of Maryland physicians and apothecaries to provide systematic instruction in Pharmacy to replace the out-dated apprenticeship training. The College, incorporated on January 27, 1841, gave its first lectures in November. In 1904, the College joined with a group of medical schools and the Maryland College of Dental Surgery to offer cooperative instruction in the health sciences. The new institution was known as the University of Maryland. In 1920, this group of Baltimore professional schools was merged with the Maryland State College at College Park to form the present University of Maryland.

The School now occupies buildings constructed specifically for pharmaceutical education. The laboratories and classrooms are equipped with the most modern apparatus and every aid to instruction in the liberal arts and for research in pharmacy is available.

The library facilities are excellent. The pharmacy collection containing over 27,000 books is housed in the new Health Sciences Library.

Students have access to the time-honored collections of the Enoch Pratt, the Peabody, the Medical and Chirurgical Faculty, and The Johns Hopkins University. These libraries are within convenient distance of the School.

Students also have access to the art collections at the Walters Art Gallery and the Baltimore Museum of Art.

Like all professions devoted to education in the health sciences, pharmacy has expanded its period of training. The American Association of Colleges of Pharmacy requires a Five Year Program and students entering the study of pharmacy in the Autumn of 1960 will be required to enroll in a Five Year Pharmacy Program.

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education. The School holds membership in the American Association of Colleges of Pharmacy. The diploma of the School is recognized by every board of pharmacy.

Degrees

The School of Pharmacy offers courses leading to the following degrees: Bachelor of Science in Pharmacy, Master of Science, Doctor of Philosophy.

The general procedures to be followed by undergraduate students are set forth below.

Candidates for advanced degrees must register in the Graduate School of the University. For detailed information, see the catalog of the Graduate School.

Programs Offered During the 1960-1961 Academic Year

Properly qualified students may enroll in the the Sophomore Year of the four year educational program at the School of Pharmacy at Baltimore in September 1960. As a result of a decision by the American Council on Pharmaceutical Education, students beginning a pharmacy or pre-pharmacy curriculum on or after April 1, 1960 will be required to enroll in the academic program of not less than five years. At the University of Maryland the five year program will consist of two years of a pre-professional program and a three year pharmacy program. Only the three year pharmacy program will be offered in Baltimore. The pre-professional program will not be available in Baltimore but may be obtained at the College Park campus of the University or at any other accredited university or college where appropriate courses are offered.*

Admission To Advanced Standing in the Four Year Program

Only students who have completed all the requirements (except Pharmacy Orientation) for the Freshman year or more of the current four year program will be considered as transfer students to be admitted in September 1960.

An applicant for admission to advanced standing must fulfill the requirements for admission to the freshman class and present official transcripts of his college record along with a certificate of good standing from the college he attended. His grade average must be at least C or the equivalent in the college's grading system.

Transfers from colleges of pharmacy accredited by the American Council on Pharmaceutical Education are given credit for the work of the first three years of the pharmacy curriculum which they have completed.

Transfers from liberal arts colleges are given credit for the liberal arts subjects of the pharmacy curriculum. Not more than a year's credit is given for work completed at a liberal arts college.

All students admitted to advanced standing are required to take those courses in the School's curriculum which they have not completed. In the schedules for transfer students, elementary subjects not completed are given preference over advanced work.

*Courses approved by the University of Maryland in non-accredited junior colleges within the State of Maryland may be accepted for credit requirements by the University. The year (not less than 24 hours of academic work) immediately prior to admission must be successfully completed in a regionally accredited college or university.

Credit is not given for pharmaceutical work done in evening or correspondence schools, nor is credit given by examination for work done at other institutions if the school did not grant credit.

In determining the grade-point average of transfer students, only those courses taken at the School of Pharmacy of the University of Maryland are used.

Requests for application blanks and information should be directed to the Dean of the School of Pharmacy or to the Director of Admissions of the University in Baltimore.

Requirements for Admission to the Five Year Program

ADMISSION TO PRE-PROFESSIONAL PROGRAM AT COLLEGE PARK

The graduates of accredited secondary schools will be admitted by certificates upon the recommendation of the secondary school principal.

Interested secondary school students are invited to write to the Dean of the School of Pharmacy in Baltimore for a catalog concerning the School and for literature about the opportunities in the pharmacy profession.

Application forms may be obtained only from the Director of Admissions of the University of Maryland at College Park. The requirements for admission to the School of Pharmacy at College Park are, in general, the same as those for admission to the other colleges and schools of the University. Applications must be made to the Director of Admission, at College Park, Maryland.

The following academic subjects are recommended and required for admission to the Pre-Pharmacy program at College Park:

<i>Subjects</i>	<i>Recommended</i> 4 Units	<i>Required</i> 4 Units
English		
College Preparatory Mathematics—including algebra (1), plane geometry (1) and additional units in advanced algebra, solid geometry, trigonometry, or advanced mathematics	4	2
Physical Sciences (Chemistry and Physics)	2	1
History and Social Sciences	2	1
Biological Sciences	1	0
Foreign Language—German or French	2	0
Unspecified academic subjects	1	8
Total	16	16

Annual costs of attending the University at College Park for Maryland residents include: fixed charges, \$185.00; instructional materials (average laboratory fees), \$24.00; special fees, \$77.00, board, \$400.00 and lodging, \$170.00 to \$200.00. Non-resident students are assessed an additional fee of \$300.00 and lodging costs are \$220.00 to \$250.00.

University of Maryland

A fee of \$10.00 must accompany a prospective student's application for admission. If a student enrolls for the term for which he applied, the fee is accepted in lieu of the matriculation fee.

A complete statement of admission requirements and policies will be found in the publication entitled "An Adventure in Learning." A copy of this publication may be obtained by writing to the Office of University Relations, North Administration Building, University of Maryland, College Park, Maryland.

The pre-professional program offered at College Park is as follows:

COLLEGE PARK DIVISION

	Semester	
	I	II
<i>First Year</i>		
Chemistry 1, 3—General Chemistry	4	4
*English 1, 2—Composition and American Literature	3	3
Math. 10, 11—Algebra, Trigonometry and Analytical Geometry	3	3
or		or
Math. 18, 19—Elementary Mathematical Analysis	5	5
Zoology 1—General Zoology	4	..
Botany 1—General Botany	..	4
Physical Activities	1	1
Air Science 1, 2—Basic Air Force R.O.T.C. (Men)	2	2
Health 2, 4—Health (Women)	2	2
Total	17-19	17-19
<i>Second Year</i>		
*English 3, 4 or 5, 6—Composition and World or English Literature	3	3
*History 5, 6—History of American Civilization	3	3
Physics 10, 11—Fundamentals of Physics	4	4
Chemistry 19—Elements of Quantitative Analysis	..	4
Economics 37—Fundamentals of Economics	3	..
*Group I Elective or Government and Politics I	3	..
Elective:		
Approved Elective from Group I or Group II of American Civilization Program	..	3
Air Science 3, 4—Basic Air Force R.O.T.C. (Men)	2	2
Physical Activities	1	1
Total	17-19	18-20

*The Program in American Civilization.

THE PROGRAM IN AMERICAN CIVILIZATION

The University considers it important for every student to achieve an appreciative understanding of this country, its history and its culture. It has therefore established a comprehensive program in American Civilization. This program is also designed to provide the student with a general educational background.

Work in American Civilization is offered at three distinct academic levels. The first level is required of all freshmen and sophomores at the University and is described below. The second level is for undergraduate students wishing to carry a major in this field (see catalog for the College of Arts and Sciences). The third level is for students desiring to do graduate work in this field (see catalog for the Graduate School).

All students receiving a baccalaureate degree from the University of Maryland must (except as specific exceptions are noted in printed curricula) obtain 24 semester hours of credit in the lower division courses of the American Civilization Program. Although the courses in the Program are prescribed generally, some choice is permitted, especially for students who demonstrate in classification tests good previous preparation in one or more of the required subjects.

The 24 semester hours in American Civilization are as follows:

1. English (12 hours, Eng. 1, 2 and 3, 4 or 5, 6).

American History (6 hours, Hist. 5, 6), and American Government (3 hours, G. & P. 1) are required subjects; however, students who qualify in one, two or all three of these areas by means of University administered tests are expected to substitute certain elective courses. Through such testing a student may be released from 3 hours of English (9 hours would remain an absolute requirement), 3 hours of American History (3 hours remaining as an absolute requirement), and 3 hours of American Government. Students released from 3 hours of English will take Eng. 21 instead of Eng. 1 and 2. Those released from 3 hours of History will take Hist. 56 instead of Hist. 5 and 6. Students who have been exempted from courses in English, American History, or American Government may not take such courses for credit.

2. For the 3 additional hours of the 24 hours required, students elect one course from the following group (Elective Group I):

Economics 37, Fundamentals of Economics. (Not open to Freshmen. Students who may wish to take additional courses in economics should substitute Economics 31 for Economics 37.)

Philosophy 1, Philosophy of Modern Man

Sociology 1, Sociology of American Life

Psychology 1, Introduction to Psychology

(Students enrolled in the College of Business and Public Administration will normally meet this requirement by taking Economics 31 in the sophomore year.)

3. Students who, on the basis of tests, have been released from 3, 6 or 9 hours of otherwise required courses in English, American History or American

Government (see 1 above), shall select the replacements for these courses from any or all of the following groups: (a) more advanced courses in the same department as the required courses in which the student is excused, or (b) Elective Group I (see 2 above), provided that the same course may not be used as both a Group I and a Group II choice, or (c) Elective Group II. Group II consists of the following 3-hours courses:

History 2, History of Modern Europe; either History 51 or 52, The Humanities; either Music 20, Survey of Music Literature or Art 22, History of American Art; and Sociology 5, Anthropology.

Admission to Pharmacy Program at Baltimore, Maryland

A. FROM COLLEGE PARK DIVISION

Students who have completed the prescribed pre-professional program at College Park with a scholastic average of not less than C will qualify for admission to the pharmacy program at Baltimore.

B. FROM OTHER UNIVERSITIES AND COLLEGES

Applicants for admission must present evidence of having completed successfully two academic years of work in an accredited college* of arts and sciences based upon the completion of a four-year high school course or the equivalent in entrance examinations. The college course must consist of a minimum of 60 semester hours of credit exclusive of physical education, military science or similar courses. The 60 semester hours must include at least 6 hours of English, 6 hours of mathematics (algebra, trigonometry and analytical geometry), 8 hours of general biology or botany and zoology, 8 hours of general inorganic chemistry, including qualitative analysis; 4 hours of quantitative chemistry, 8 hours of physics, 3 hours of economics and the remainder as electives. The electives must be selected from non-science areas and may include additional courses in English and economics, courses in history, philosophy, political science, psychology, sociology, speech and foreign languages.

All applicants for admission to the School of Pharmacy at Baltimore must have a scholastic average of not less than "C" (where the lowest passing grade is "D"), or its equivalent. This average shall be based on all college courses undertaken by the student in his pre-professional program, exclusive of credit in military science, physical education, hygiene or similar courses.

Pharmacy Program

The first year of the Pharmacy Program of the five-year curriculum will be offered beginning September 1961. This program along with the pre-professional courses is given in summary forms on pages 4, 6, and 31.

*Courses approved by the University of Maryland in non-accredited junior colleges within the State of Maryland may be accepted for credit requirements by the University. The year (not less than 24 hours of academic work) immediately prior to admission must be successfully completed in a regionally accredited college or university.

Admission And Costs

ADMISSION PROCEDURE FOR ALL APPLICANTS TO ADVANCED STANDING IN THE FOUR YEAR PROGRAM AT BALTIMORE

1. Request the Director of Admissions or the Dean of the School of Pharmacy to send the preliminary application blank. Fill the blank out fully including the names of all schools and colleges which the candidate has attended. Sign the blank and return it with the required photographs and a seven dollar and fifty cent investigation fee to the Director of Admissions. (This fee will not be refunded or credited on any subsequent bill.)

2. Send the high school record blank which accompanies the application blank to the principal of the high school attended and request that he mail it promptly to the Admissions Office. If these credentials appear satisfactory, the prospective student will be advised to:

3. Report to the School of Pharmacy for entrance examinations and interviews. The School seeks indications of aptitude for undertaking pharmacy studies by examining the school records of candidates, their scores in aptitude and achievement tests, and estimates of their interests, maturity, and personality. Entrance examinations and interviews are held in February, but subsequent opportunities are given.

4. The Admissions Office acts continuously upon the application of candidates whose credentials are complete, except for the final school record, and the School of Pharmacy notifies such candidates who appear satisfactory that they have been tentatively accepted.

5. Students who are offered tentative admissions must immediately make a deposit of \$60.00 (\$10.00 matriculation fee plus \$50.00 deposit on tuition) on their September tuition. This deposit is non-returnable if the student fails to register in the autumn, but is credited against the first semester tuition charge of all students who enter.

Registration And Fees

ADMISSION PROCEDURE FOR ALL APPLICANTS FOR ADMISSION TO THE PRE-PROFESSIONAL PROGRAM AT COLLEGE PARK

All students must enroll in person at the office of the School of Pharmacy at College Park during the registration period at the beginning of each semester. On registration day the student fills out necessary forms and class cards and pays his fees. Detailed directions concerning dates and procedures are mailed during the summer to students who are eligible to enroll in the fall. All new students must matriculate.

All students must complete their registration at the office of the registrar upon the days scheduled in the calendar. No student is permitted to enter

University of Maryland

classes until he has done so. Students who fail to register on the days and hours as announced are required to pay a late registration fee of five dollars.

There is a fee of \$3.00 for changes in registration made after first week of instruction.

Tuition and Fees (Baltimore Campus)

FULL-TIME UNDERGRADUATE STUDENTS

<i>Tuition Fee (per semester)</i>	
Residents of Maryland	\$135.00
Non-residents	160.00
<i>Laboratory Fee (per semester)</i>	15.00
(This one fee covers all laboratory courses)	
<i>*Student Union Fee (per annum)</i>	30.00
<i>*Special Fee (per annum)</i>	10.00
<i>*Student Union Fee (Summer Session)</i>	10.00
<i>Student Activities Fee (per semester)</i>	10.00
(This fee covers subscription to the yearbook, <i>Terra Mariae</i> , all expenses of School luncheons, picnics, dances.)	

The tuition, laboratory and student activities fees for each semester are payable at the time of registration therefor. The Student Union fee and the Special fee are payable in full at the time of first registration. Students wishing to make arrangements for deferred payment of tuition charges must do so with the Financial Office at or prior to registration for the semester for which such charges are imposed.

Incidental Charges

For New Students Only

Application fee (non-returnable)	7.50
Matriculation fee (non-returnable)	10.00

*The Student Union fee is payable by all students enrolled in the Professional Schools on the Baltimore Campus and is used to pay interest on and amortize the cost of construction of the Union Building. The Special fee is payable by all full-time students enrolled in the Professional Schools on the Baltimore campus and is used to finance the equipment needed for the Union Building. For students enrolling for the first time at the beginning of the second semester, the Student Union Fee will be \$15.00; the Special Fee will be \$5.00. All students carrying as much as 12 credit hours of work are considered full-time students subject to this fee.

All summer school students will pay a \$6.00 Student Union Fee. This Student Union Fee is in addition to the tuition, laboratory fees, and book charges, etc.

Deposit upon acceptance for admission	50.00
(This fee will be credited against the first semester's tuition.)	

For Seniors

Graduation Fee (To be paid in February of the Senior Year)	\$15.00
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Delinquencies and Breakage

Late Registration Fee	5.00
Special Examination Fee	5.00
Breakage—Students are required to pay for all breakage in excess of \$5.00 per year	

Other Expenses

Books and supplies, approximately	75-150.00
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* Students registering for more than a regularly scheduled semester's work will be charged additionally for each course.

Fee for Changes in Registration after first week	3.00
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PART-TIME UNDERGRADUATE STUDENTS

All students registered for twelve semester hours or more are considered full-time students. Part-time students are charged as follows:

Tuition Fee (for each semester hour per semester)	\$12.00
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Laboratory Fees (per semester)

Chemistry	10.00
Microbiology	10.00
Pharmacognosy	5.00
Pharmacology	10.00
Physics	10.00
Pharmacy	10.00
Physiology	10.00
Zoology	8.00

*Student Union Fee (per annum)	6.00
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*Student Union Fee (Summer Session)	6.00
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Student Activities Fee (per semester)	10.00
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*The Student Union fee is payable by all students enrolled in the Professional Schools on the Baltimore Campus and is used to pay interest on and amortize the cost of construction of the Union Building. The Special fee is payable by all full-time students enrolled in the Professional Schools on the Baltimore campus and is used to finance the equipment needed for the Union Building. For students enrolling for the first time at the beginning of the second semester, the Student Union Fee will be \$15.00; the Special Fee will be \$5.00. All students carrying as much as 12 credit hours of work are considered full-time students subject to this fee.

All summer school students will pay a \$6.00 Student Union Fee. This Student Union Fee is in addition to the tuition, laboratory fees, and book charges, etc.

University of Maryland

GRADUATE STUDENTS

Matriculation fee (for new students only, non-returnable)	\$10.00
Tuition fee (per semester hour each semester)	12.00
Tuition fee for students carrying 10 or more semester credit hours (per semester)	120.00
Laboratory fee—Same as undergraduate schedule above	
*Student Union Fee (per annum)	30.00
*Student Union Fee (Summer Session)	6.00
*Special Fee (per annum)	10.00

Graduation Fee

Master's degree	10.00
Doctor's degree (including hood and micro-filming of thesis)	50.00

REFUND OF FEES UPON WITHDRAWAL (BALTIMORE CAMPUS)

Students withdrawing from School at any time during the academic year, must file a written request for withdrawal with the Dean. Students who do not comply with this ruling are not issued an honorable dismissal and are not accorded any refund of tuition. Minors may withdraw only with the written consent of parent or guardian. Fees, excluding Application Fee, Matriculation Fee, Student Activities' Fee, the \$50.00 deposit on tuition, and any scholarship credit, are refunded to withdrawing students in accordance with the following schedule:

Period from date instruction begins:

Two weeks or less	80%
Between two and three weeks	60%
Between three and four weeks	40%
Between four and five weeks	20%
Over five weeks	No return

The date used in computing refunds is the date the application for withdrawal is filed in the Office of the Dean.

*The Student Union fee is payable by all students enrolled in the Professional Schools in the Baltimore Campus and is used to pay interest on and amortize the cost of construction of the Union Building. The Special fee is payable by all full-time students enrolled in the Professional Schools on the Baltimore campus and is used to finance the equipment needed for the Union Building. For students enrolling for the first time at the beginning of the second semester, the Student Union Fee will be \$15.00; the Special Fee will be \$5.00. All students carrying as much as 12 credit hours of work are considered full-time students subject to this fee.

All summer school students will pay a \$6.00 Student Union Fee. This Student Union Fee is in addition to the tuition, laboratory fees, and book charges, etc.

Text Books

Each student is required to have his own text books. The books required in each course will be announced at the beginning of each semester.

Tuition and Fees (College Park Campus) for Pre-professional Program. See "Adventure in Learning."

Changes In Curriculum

The Faculty Assembly reserves the right to make, at any time, such changes in the curriculum as may be found necessary or desirable.

Definition of Residence and Non-Residence

Students who are minors are considered to be resident students if at the time of their registration their parents have been domiciled in the State of Maryland for at least one year.

The status of the residence of a student is determined at the time of his first registration in the University, and may not thereafter be changed by him unless, in the case of a minor, his parents move to and become legal residents of Maryland by maintaining such residence for at least one full year. However, the right of the minor student to change from a non-resident status to resident status must be established by him prior to the registration period set for any semester.

Adult students are considered to be residents if at the time of their registration they have been domiciled in Maryland for at least one year provided such residence has not been acquired while attending any school or college in Maryland or elsewhere. *Time spent on active duty in the armed services while stationed in Maryland will not be considered as satisfying the one year period referred to above except in those cases in which the adult was domiciled in Maryland for at least one year prior to his entrance into the armed service and was not enrolled in any school during that period.*

The word "domicile" as used in this regulation shall mean the permanent place of abode. For the purpose of this rule only one domicile may be maintained.

Academic Regulations (Baltimore Campus)

ATTENDANCE REQUIREMENTS

Students who have not attended eighty-five percent of scheduled classes and laboratory periods for any subject are not admitted to the final examination in that subject. Absences due to illness and late registration are normally counted with the fifteen percent allowable absence. Lateness of more than half a period is construed as absence; two latenesses of less than half a period are also construed as an absence.

University of Maryland

EXAMINATIONS

Written and oral quizzes are given throughout the semester at the discretion of the instructor. Final examinations are held at the end of each semester as scheduled on the calendar printed in this catalog.

Students unable to appear for final examinations must report to the Dean immediately. When the absence is justifiable, the Dean will grant permission for a deferred examination.

GRADING SYSTEM

The School uses the standard University of Maryland grading system:

<i>Grade</i>	<i>Interpretation</i>	<i>Point Value</i>
A	Excellent	4
B	Good	3
C	Fair	2
D	Poor but passing	1
F	Failure	0
I	Course work incomplete	replaced by definite grade when course requirements have been met

Standing in scholarship is based upon the grade-point average for the semester's work. This average is found by multiplying the grade received by the number of credit hours the course carries, e.g.:

<i>Subject</i>	<i>Credit</i>	<i>Grade</i>	<i>Points</i>
Chemistry	4	C	8
Microbiology	4	C	8
Pharmacognosy	4	B	12
Pharmacy	4	A	16
Pharmacy Administration	3	D	3
	19		47

Dividing the number of points by the number of credits, the students is found to have a grade point average of 2.47.

When, for any reason, a course is repeated, the final mark is used.

In computing scholastic averages only those courses taken in residence at the University of Maryland are considered.

Scholarship Requirements (Baltimore Campus)

MID-SEMESTER FAILURE WARNINGS

Each student is assigned to a Class Advisor who counsels him on his

academic standing. Six weeks after the beginning of each semester, the Dean warns and the Advisor interviews all students earning grades of D and F.

INCOMPLETE WORK

The mark of I (incomplete) is exceptional. It is to be given only to a student whose work in a course has been qualitatively satisfactory, when, because of illness or other circumstances beyond his control, he has been unable to complete the requirement. Whenever the mark I is used the instructor enters on the class card a reason of the character stated above with an estimate of the quality of the student's work. In cases when this mark is given the student must complete the work assigned by the instructor by the end of the next semester in which that subject is again offered or the mark I becomes F.

RAISING GRADE OF D

Work of mark D, or of any passing mark, cannot be raised to a higher mark except by repeating the course. A student who repeats a course in which he failed or for which he has received credit for work done at the University, or elsewhere, must meet all the requirements of the course, including regular attendance, laboratory work, and examinations. His final mark will be substituted for the mark already recorded, but he will not receive any additional credit for the course. Although the final mark received in the course will be used in determining credit for promotion and graduation, it does not apply to honors and awards. See applicable section under "Honors and Awards".

REMOVAL OF AN F GRADE

A student receiving an F grade in any course and if not successful in raising his grade after repeating the course once, will be required to withdraw from the School of Pharmacy. In unusual cases, a student may be permitted, with the written permission of the Dean and the head of the department giving the course, to repeat the course for the second time. Such permission can be given to the student for only one course.

An appropriately supported petition for any exception to the above regulation must be submitted to the Faculty Council. Such exception will be granted under unusual and extraordinary circumstances and shall require the approval of the head of the department giving the course.

The above rules on removal of an F grade apply also to the student who is permitted to take the course at another institution to meet requirements for the degree from the School of Pharmacy of the University of Maryland.

REGULATIONS FOR PROMOTION AND PROBATION

Students in the Sophomore year are expected to maintain a grade point average of not less than 1.5 for each semester. Any student in the Sophomore year

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who fails to maintain a grade point average of 1.5 for any semester will be placed on probation during the next semester.

Students in the Junior and Senior years are expected to maintain a grade point average of not less than 2.0 for each semester in these years. Any student in the Junior and Senior years who fails to maintain a grade point average of 2.0 for any semester in these years will be placed on probation during the next semester.

Students who fail more than one-fifth and less than one-half, in semester hour credit, of their scheduled work for any semester will be placed on probation during the next semester.

For promotion from Sophomore to Junior year a student must have maintained a grade point average of 1.5 for the Sophomore year.

For promotion from the Junior to Senior year a student must have maintained a grade point average of not less than 2.0 for the Junior year. Students in the Senior class must maintain a grade point average of not less than 2.0 to become eligible for graduation.

Any student on probation for any semester is expected to pass all work for which he is registered in that semester with a grade point average of not less than 1.5 for the Sophomore year and a grade point average of not less than 2.0 for the Junior and Senior years. Any student on probation who fails to pass all courses for which he is registered and who fails to maintain the grade point average for his particular year will be automatically dropped from the School of Pharmacy, at the end of that semester.

A student who fails in one-half or more of his scheduled academic credits in any semester shall be dismissed at the end of that semester for unsatisfactory scholarship.

Any student who has been on probation for two semesters and then obtains a probation grade point average for a third semester will be automatically dropped at the end of that semester.

Any student who is dismissed from the School of Pharmacy is required to report to the Dean's Office for dismissal procedures.

REGULATIONS FOR READMISSION OF STUDENTS DROPPED FOR POOR ACADEMIC STANDING

No student who has been dropped for poor academic standing shall be readmitted until at least one semester has elapsed. He shall, in the meantime, attend another school approved by the Dean of the School of Pharmacy and/or the Office of Admissions of the University of Maryland and he shall carry at least a minimum full load of work required by the school which he will

attend, but in no case shall this be less than twelve semester hours. The selection of the course of study must be approved by the Dean of the School of Pharmacy. Before applying for readmission he must obtain the recommendation of the Dean of the school which he has previously attended and he must, in addition, have a grade point average of not less than 2.0 in the work for which he was previously registered.

All students shall be readmitted on probation for one semester.

No student who has been dropped for poor academic standing shall be readmitted more than once.

REGULATIONS FOR REVIEW

In the application of the foregoing rules and regulations, the Faculty Assembly of the School of Pharmacy shall act as the final Board of Review. Any student may apply in writing to the Faculty Assembly for a reconsideration of his particular case.

GRADES OF STUDENTS WITHDRAWING FROM THE SCHOOL OF PHARMACY

The record of students who withdraw is computed as follows:

Before eight weeks of the semester have passed	WX
After eight weeks of the semester have passed, if work has been of passing grade	WP
After eight weeks of the semester have passed, if work has been of failing grade	WF

CLASSIFICATION OF STUDENTS—FOUR YEAR PROGRAM

Students having 30-64 credit hours with a grade-point average of 1.5 are classified as Sophomores.

Students having 65-104 credit hours with a grade-point of 1.5 are classified as Juniors.

Students having 105 or more credit hours with a grade-point average of 2.0 in the work of the Junior year are classified as Seniors.

Senior students must maintain a grade-point average of 2.0 in the work of the Senior year and have 144-146 credit hours to be considered as candidates for graduation, depending upon the year of their initial enrollment.

SENIOR ELECTIVE PROGRAM—FOUR YEAR PROGRAM

Students are required to elect either the RETAIL Major or the PRE-GRADUATE Major by May 1 of the Junior year. It is recommended that

University of Maryland

students electing the Pre-Graduate program will have attained a grade point average of at least 2.5 for the three previous years. Those who elect this major should also indicate their choice of electives in the Retail Major in case their average does not permit their election of the Pre-Graduate Major. The senior elective program must be approved by the Class Advisor and the Dean.

RETAIL Majors must choose between Pharmacy 81 and Pharmacy 121 and between Pharmacognosy 62 and Pharmacy 132. PRE-GRADUATE Majors, after 1959-1960, must take English 3, 4 and Mathematics 20, 21.

For further information consult with Class Advisor and see the Curriculum on page 29 of the catalog.

REQUIREMENTS FOR GRADUATION—FOUR YEAR PROGRAM

The degree of Bachelor of Science in Pharmacy will be conferred upon students who have spent at least the senior year in residence at the School of Pharmacy, who having entered prior to September 1956, have been accredited 144 semester hours instruction, or who having entered in September 1956 or thereafter, have been accredited with 146 semester hours instruction, and who have attained the required grade point standings and met the other requirements.

TRANSCRIPTS OF RECORDS

Students or alumni desiring transcripts of scholastic records may obtain them from the Registrar. The University rules regarding the issuance of transcripts are as follows: one copy of a student's record is made without charge; for additional copies, there is a fee of one dollar for each transcript, except when more than one copy is requested at the same time. In that case, one dollar is charged for the first copy and fifty cents for each additional copy.

Transcript records are of two kinds:

- (a) Informal transcripts which may be obtained by the student or alumnus for such personal use as he may wish; and
- (b) Official transcripts, bearing the University seal, which are forwarded, on request, to educational institutions, Government agencies, etc., as attested evidence of the student's record at the School of Pharmacy and his honorable dismissal therefrom.

No transcript of a student's record will be furnished in the case of any student or alumnus whose financial obligations to the School of Pharmacy have not been satisfied.

Registration With The Maryland Board of Pharmacy

The Maryland Pharmacy Law, as amended in 1931, requires all students entering upon the study of Pharmacy in the State to file application with the Maryland Board of Pharmacy. The law reads as follows:

"Any person enrolling as a student in pharmacy in any school or college of pharmacy in this state shall, not later than thirty days after enrolling, file with the Secretary of the Maryland Board of Pharmacy, an application for registration as a student of pharmacy in which said application he shall be required to furnish such information as the Board may deem appropriate, and simultaneously with the filing of said application, shall pay the Board a fee of one dollar; all such students of pharmacy shall, at the beginning of any subsequent school or college year, submit to the said Board a sworn statement of any and all actual drugstore experience acquired during the preceding vacation months."

Licensure Requirements of The Maryland Board of Pharmacy

The Maryland Board of Pharmacy will grant a certificate of registration to those persons deemed competent, after examination, by said Board of Pharmacy. Any person of good moral character who has attained the age of twenty-one years, is a graduate of a reputable school or college of pharmacy, and has completed one year as a registered apprentice in a drug store or pharmacy approved by said Board of Pharmacy for such purposes may sit for examination given for the purpose of registration.

A student may not obtain credit or practical experience in a drug store or pharmacy acquired prior to attendance as a regular student in a school or college of pharmacy or while in attendance at said school or college of pharmacy. Four months of the required practical pharmacy experience as a registered apprentice must be acquired subsequent to graduation from a recognized school or college of pharmacy, in a drug store or pharmacy approved by the Board for such purposes.

Prospective students are advised to contact the Secretary of the Maryland Board of Pharmacy, 301 West Preston Street, Baltimore 1, Maryland, for further information relative to the requirements for eligibility for licensure.

Department

The University reserves the right to request at any time the withdrawal of a student who cannot or does not maintain the required standard of scholarship, or whose continuance in the University would be detrimental to his or her health, or to the health of others, or whose conduct is not satisfactory to the authorities of the University.

Students of the last classification may be asked to withdraw even though no specific charge be made against them.

Employment

A student should be prepared to finance his education during the entire period of attendance, as all of his time should be spent in the preparation and completion of the scheduled work. Baltimore offers a number of opportunities to secure suitable employment, but it is recommended that students refrain from working during the school session.

Housing

A limited number of girls may obtain housing accommodations in the Louisa Parsons Hall, 622 West Lombard Street, which is in close proximity to the School of Pharmacy. It offers comfortable living accommodations and it is under the general supervision of the Dean of Women. Bed linens, towels, pillows, blankets and curtains are provided as a part of the general furnishings of the room. Students are requested to bring their own bedspreads, an extra blanket, bureau scarves, small rugs and a laundry bag. The individual student assumes responsibility for all dormitory property assigned to her. Any damage done to property other than that which results from ordinary wear and tear will be charged to the student concerned. Meals may be purchased at University cafeterias or in nearby restaurants.

General Information for The Baltimore Union

The Baltimore Union for students of the Professional Schools is located adjacent to the Professional Schools at 621 West Lombard Street. Accommodations for 195 men are provided in a five-story semi-air conditioned building which also contains a cafeteria, fountain lounge, meeting rooms, laundry facilities, game room, bookstore, barber shop and lounges on each floor. Double rooms are available. The rental agreement is made for rooms only; meals are served cafeteria style on a cash basis. The contract for accommodations covers the 1960-61 academic year.

ACADEMIC YEAR

The Rates are:

\$150.00 per semester per double room

\$ 80.00 per eight weeks summer session per double room

Other:

\$ 45.00 per month

Three single rooms are available. They will be assigned on the basis of length of residence in The Baltimore Union.

What the Rate covers:

The rate shown above is per person and includes the following:

Room furnishings, bed and cover, mattress, chest of drawers, closet, book shelves, desk, medicine cabinet, desk chair and desk lamp.

Maid service will include cleaning of room twice per week and replacement of change of linen once each week.

Telephone service is available through the Chesapeake & Potomac Telephone Company. Cost of the telephone is not included in the room rate. Information can be obtained from the Manager's office.

Mail service is also provided.

The resident provides blankets, towels, pillow and linens. Towels and linens must be rented through the designated Commercial Rental Service.

A small amount of luggage space is available. Storage of anything other than luggage will *not* be available.

TRANSIENTS

The Rates are:

\$ 4.00 per day

\$24.00 per week

What the Rate covers:

The services will include one bath and one face towel, one face cloth, soap and change of linen daily (once per week if weekly guest).

HOW TO APPLY FOR A ROOM ASSIGNMENT

Write:

MANAGER'S OFFICE
The Baltimore Union
621 West Lombard Street
Baltimore 1, Maryland

Parking

The University of Maryland does not provide any parking facilities on university parking lots for students on the Baltimore Campus.

The Health Sciences Library

The new Health Sciences Library will be opened for the Fall Term of the 1960-1961 School Year. This new library building will include the collections of the Pharmacy, Dental, Medical, and Nursing Schools.

The Rules and Regulations by the library will be available for distribution at the time of registration of students in the 1960 Fall Term.

Professorships, Graduate Fellowships and Grants

The Emerson Professorship of Pharmacology

Captain Isaac E. Emerson, of Baltimore, gave to the School of Pharmacy in 1927, a sum of money to establish a professorship of Pharmacology. The first appointment was made in 1930 when Dr. Marvin R. Thompson was designated Emerson Professor of Pharmacology. The chair was subsequently held by the late Dr. Clifford W. Chapman. Dr. Casimir T. Ichniowski, the present incumbent, was appointed June 15, 1951.

American Foundation for Pharmaceutical Education Fellowships

The American Foundation for Pharmaceutical Education offers annual fellowships of one thousand to fifteen hundred dollars to promising graduate students desirous of doing research in pharmacy, pharmaceutical chemistry, pharmacology, and pharmacognosy; non-veteran students may also apply for an additional allowance of five hundred dollars for tuition, fees, and supplies. Address applications directly to the American Foundation for Pharmaceutical Education, 1507 M Street, N. W., Washington 5, D. C.

The H. A. B. Dunning Research Fellowship

Dr. H. A. B. Dunning, an alumnus of the School of Pharmacy, former associate professor of chemistry, and prominent manufacturing pharmacist of Baltimore, has contributed annually since 1930 a sum of money to maintain a research fellowship in pharmaceutical chemistry. The fellowship is open to promising graduate students interested in pharmaceutical chemistry.

Centennial Research Fund Fellowships

At the celebration of the hundredth anniversary of the founding of the School of Pharmacy, a sum of money was collected to provide two fellowships for research studies in the following fields: pharmacy, pharmaceutical chemistry, pharmacology, microbiology, and pharmacognosy. The selection of candidates for these fellowships will be made by the Faculty Assembly with the approval of the Dean.

The Hudnut Sales Co. Fellowship

The Hudnut Sales Company of New York contributes sufficient funds to provide a fellowship paying \$1000.00 annually for research in pharmaceutical chemistry and the allied sciences.

The Noxzema Foundation Fellowship

The Noxzema Foundation, Inc., is contributing a fund not to exceed \$1600.00 for a graduate fellowship open to United States citizens. A candidate will be selected on the basis of his educational qualifications by the Fellowship Committee of the School of Pharmacy of the University of Maryland to which the Noxzema Foundation, Inc. may appoint a non-voting member. This fellowship may be renewed annually at the discretion of the grantors.

Research Grant of the Alumni Association of the School of Pharmacy

The Alumni Association of the School of Pharmacy gives to the School each year the sum of \$100.00 to be used as a research grant for a student selected by the Committee on the Research Grant of the Alumni Association to enable the student to engage in pharmaceutical research in the School of



DUNNING HALL
of the School of Pharmacy of The University of Maryland at Baltimore



BALTIMORE UNIVERSITY

1. UNIVERSITY HOSPITAL—UH
2. PSYCHIATRIC INSTITUTE—PI
3. MEDICAL BUILDING (DAVIDGE HALL)—DH
4. BRESSLER RESEARCH BUILDING—BRB
5. SCHOOL OF LAW—SL
6. GRAY LABORATORY—GL
7. MEDICAL TECHNOLOGY BUILDING—MTB
8. ADMINISTRATION BUILDING—AB
9. SCHOOL OF DENTISTRY—SD
10. DENTAL CLINIC—DC





The Baltimore Union Building

Pharmacy. The research conducted must be of general pharmaceutical interest and must be accepted upon completion for publication in one of the pharmaceutical journals.

Other Research Grants

The Department of Pharmaceutical Chemistry has substantial grants from the Sterling-Winthrop Research Institute, Smith, Kline & French Laboratories and the National Institutes of Health. Through these grants, the School of Pharmacy is able to provide a number of research fellowships available to graduate and post-doctoral students in pharmaceutical chemistry.

Assistantships

Graduate Assistantships

Graduate assistantships, covering tuition and laboratory fees and carrying a stipend of \$1800.00 for a ten-month academic year, are available to qualified students giving fourteen hours of laboratory and teaching services to the departments in which they serve. Such assistants can usually carry two-thirds of the normal graduate work.

Internships and Residencies in Hospital Pharmacy

1. University (of Maryland) Hospital Residency

The Department of Pharmacy of the University Hospital, together with the School of Pharmacy and the Graduate School of the University of Maryland, offer a residency in pharmacy in 1960 to a qualified graduate of an accredited school or college of pharmacy. The appointment, beginning September 1, 1960, continues for twenty-two months. During the academic school year, the resident will devote half time to the hospital pharmacy training program and half time to graduate study at the School of Pharmacy leading to the Master of Science degree to be conferred by the University of Maryland and a certificate of residency to be awarded by the University Hospital. Full time training in the University Hospital will be required during the summer of 1961. The University Hospital will provide a stipend of \$266.66 per month, parking space, uniforms and laundering of uniforms without charge. The resident must pay the tuition, laboratory and other fees for graduate work in the University.

Complete information on this program may be secured by addressing inquiries to the Director of Pharmaceutical Services, University Hospital, Baltimore 1, Maryland or to the Dean of the School of Pharmacy, University of Maryland, Baltimore 1, Maryland.

2. The Johns Hopkins Hospital Pharmacy Internship

The Pharmacy Department of the Johns Hopkins Hospital, together with the School of Pharmacy and the Graduate School of the University of Maryland, offer annually to qualified graduate pharmacists several internships in hospital pharmacy. The appointments, beginning September first, run for twenty-two months. During twenty months, appointees devote half time to hospital pharmacy service and half time to graduate work leading to the Master of Science degree granted by the University of Maryland and a certificate of internship awarded by the Johns Hopkins Hospital. Full time training in the Johns Hopkins Hospital Pharmacy is required for two (2) months during the summer of 1961. Four weeks of vacation are allowed during the term of appointment. The Hospital provides a stipend of \$200.00 per month and the School of Pharmacy reduces tuition fees for these candidates by 25%. However, candidates must pay the regular laboratory fees.

Complete information on this program may be secured by addressing inquiries to the Chief Pharmacist, Johns Hopkins Hospital, Baltimore 5, Maryland, or the Dean of the School of Pharmacy, University of Maryland, Baltimore 1, Maryland.

Scholarships and Loans (Baltimore Campus)

All requests for information concerning scholarships should be addressed to Dean Noel E. Foss, School of Pharmacy, University of Maryland, 636 W. Lombard St., Baltimore 1, Maryland. The selection of the recipients of the scholarships and loans is made by a committee of the Faculty of the School of Pharmacy.

Alumni Association School of Pharmacy Scholarships

The Alumni Association of the School of Pharmacy of the University of Maryland makes available annually scholarships worth \$100.00 per semester to qualified sophomore, junior and senior students who have maintained a superior scholastic average and who are in need of financial assistance to complete their education.

Alumni Association University of Maryland Scholarship

The General Alumni Council of the University Alumni Association provides a scholarship in the amount of \$250.00. The award is based on scholarship, leadership and need.

American Foundation for Pharmaceutical Education Scholarships

The American Foundation for Pharmaceutical Education makes available scholarships worth \$100.00 per semester to qualified junior and senior students who have maintained an average of "B" or above and who are in need of financial assistance to complete their schooling.

Carroll Chemical Company Scholarship

The Carroll Chemical Company of Baltimore, Maryland, initiated in 1956 a fund to provide one undergraduate scholarship to a qualified sophomore student who has maintained a superior scholastic average during the freshman year and who is in need of financial assistance. This scholarship includes the cost of tuition, fees, textbooks and equipment, not to exceed \$500.00 per academic year.

The Charles Caspari, Jr., Memorial Scholarship

In memory of Prof. Charles Caspari, Jr., former dean of the School of Pharmacy, a number of his friends and Alumni have made an endowment for a scholarship worth \$100.00 annually.

The Charles Landon Henry Memorial Scholarship

In memory of her husband, Charles Landon Henry, for many years a member of the Maryland Pharmaceutical Association, Mrs. Nora Howard Henry has endowed a scholarship worth \$100.00 to be awarded annually by the Scholarship Committee of the School of Pharmacy, University of Maryland to a senior student who has shown superior proficiency in practical and commercial pharmacy.

The Noxzema Foundation Scholarships

The Noxzema Foundation, Inc. is contributing a fund to provide one or two undergraduate scholarships not to exceed \$500 each, open to citizens of the United States. Candidates will be selected on the basis of their educational qualifications by the Scholarship Committee of the School of Pharmacy of the University of Maryland to which the Noxzema Foundation, Inc. may appoint a non-voting member. This scholarship may be renewed annually at the discretion of the grantors.

Prince Georges-Montgomery County Pharmaceutical Association Scholarship

The Prince Georges-Montgomery County Pharmaceutical Association contributes funds to provide a scholarship paying \$100.00 per semester to a qualified sophomore, junior or senior student who has maintained a superior scholastic average and who is in need of financial assistance.

Read Drug Stores Foundation, Inc., Scholarships

The Read Drug Stores Foundation, Inc., of Baltimore, Maryland, contributes funds to provide scholarships paying \$100.00 per semester to qualified sophomore, junior and senior students who have maintained a superior scholastic average and who are in need of financial assistance to complete their schooling.

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Rose Hendler Memorial Loan Fund

L. Manuel Hendler and Family have established a loan fund in memory of Mrs. Rose Hendler for needy students. This fund is available to qualified junior and senior students only, and loans therefrom are made upon the recommendation of the Dean.

NDEA Student Loans

The National Defense Education Act of 1958 provides funds for student loans. A student may borrow in one year a sum not exceeding \$1000 and during his entire course of study may borrow a sum not exceeding \$5000. The borrower must sign a note for the loan and agree to interest and repayment terms established by the University. Repayment of the loan begins one year after the borrower ceases to be a full time student and must be completed within ten years thereafter. No interest is charged on the loan until the beginning of the repayment schedule. Interest after that date is to be paid at the rate of 3 per cent per annum.

The National Defense Education Act contains a provision which provides that up to fifty per cent of a student loan plus interest may be cancelled in the event the borrower becomes a full time elementary or secondary school teacher. Such cancellation is to be at the rate of 10 per cent a year up to 5 years.

Honors and Awards

The Dean's Honor List

The Dean publishes at the end of each semester a list of those students who have maintained an average of "B" or better during the semester. Students whose names appear on the list both semesters receive the School's academic medal at the Honors Day Convocation held in June of each year.

In computing the grade point standing for the Dean's Honor Roll, if a student repeats more than one course in any year, both grades earned for these courses will be averaged in determining grade point standing.

Phi Kappa Phi Honorary Fraternity

The University of Maryland Chapter of Phi Kappa Phi, a national fraternity for honor students in all branches of learning, was established at the University in 1920. Qualified students at the School of Pharmacy are eligible by invitation to join this honorary fraternity at the end of the first semester of the Junior Year.

Rho Chi Honorary Pharmaceutical Society

Omicron Chapter of Rho Chi, national honorary pharmaceutical society, was established at the University of Maryland in 1930. Charters for chapters

of this organization are granted only to groups in schools or colleges who are members in good standing of the American Association of Colleges of Pharmacy. Eligibility for membership in the Society is based on high attainment in scholarship, character, personality, and leadership. All candidates selected for membership must have completed seventy-five credit hours of college work and must be approved by the Dean of the School of Pharmacy.

The Society also awards annually a Remington's "Practice of Pharmacy" to the sophomore student of high moral character who, having completed forty-eight credits hours of college work, has attained the highest scholastic average in his class and a grade-point average of 3.0 or above.

The School of Pharmacy Gold Medal

A gold medal is awarded annually to the candidate for the degree of Bachelor of Science in Pharmacy who has attained the highest general average, provided that this average is not below the grade of "B". Certificates of Honor are awarded to the three students having the next highest general average, provided these averages do not fall below the grade of "B".

Honorable mention is made annually of the first three junior students having the highest general average, provided this average does not fall below the grade of "B".

Only courses taken at the University of Maryland are considered in awarding these honors.

The William Simon Memorial Prize

In honor of the late Dr. William Simon, for thirty years a professor of chemistry in the School of Pharmacy, a gold medal is awarded annually by the Faculty Assembly to a candidate for the degree of Bachelor of Science in Pharmacy who has done superior work in the field of practical and analytical chemistry. The recipient must stand high in all subjects. In recommending a student for the prize, the professor of chemistry is guided in his judgment of the student's ability by observation and personal contact as well as by grades.

The Andrew G. DuMez Medal

In memory of Dr. Andrew G. DuMez, late dean and professor of pharmacy at the School of Pharmacy, Mrs. Andrew G. DuMez has provided a gold medal to be awarded annually by the Faculty Assembly to a candidate for the degree of Bachelor of Science in Pharmacy for superior proficiency in pharmacy.

The L. S. Williams Practical Pharmacy Prize

The late L. S. Williams left a trust fund, the income of which is awarded

University of Maryland

annually by the Faculty Assembly of the School of Pharmacy to the senior student having the highest general average throughout the course in practical and dispensing pharmacy.

The Conrad L. Wich Pharmacognosy Prize

In appreciation of assistance which the Maryland College of Pharmacy extended to him as a young man, Mr. Conrad L. Wich provided a fund, the income from which is awarded annually by the Faculty Assembly of the School to the senior student who has done exceptional work throughout the course in pharmacognosy.

David Fink Memorial Prize

In memory of David Fink '24, Mr. Samuel I. Raichlen gives a new United States Dispensatory as a prize to the senior student recommended by the Faculty Assembly for proficiency in the general practice of pharmacy.

Phi Beta Chapter, Phi Sigma Delta Fraternity Cup

The Phi Beta Chapter of the Phi Sigma Delta Fraternity provides a cup in memory of Joseph J. Fine, Melvin S. Adelman and Albert Goldberg, who died in the service of their country. This cup is awarded annually to the senior student selected by the Faculty Assembly as having exhibited outstanding qualities of character and leadership.

Alpha Zeta Omega Fraternity Prize

The Kappa Chapter and the Maryland Alumni Chapter of the Alpha Zeta Omega Fraternity provide a prize to be awarded annually to the senior student chosen by the Faculty Assembly for proficiency in pharmacology.

Epsilon Alumnae Chapter, Lambda Kappa Sigma Sorority Prize

The Epsilon Alumnae Chapter of the Lambda Kappa Sigma Sorority provides annually a key which is awarded to the senior student selected by the Faculty Assembly for outstanding proficiency in Pharmacy Administration.

The Ladies' Auxiliary, Prince Georges-Montgomery County Pharmaceutical Association Award

Books equivalent in value to \$25.00 are made available by the Ladies' Auxiliary, Prince Georges-Montgomery County Pharmaceutical Association, to the sophomore student who attains the highest general average.

Merck Awards

Merck & Company, Inc., Rahway, New Jersey, offer a set of valuable reference books to the senior student who attains a high standing in pharmacy. A second set of books is given to the senior student who has a high standing in pharmaceutical chemistry.

Bristol Laboratories, Inc. Award

A copy of Gould's "Medical Dictionary" is made available by Bristol Laboratories, Inc., to the senior student who has contributed the most to pharmacy through his extra-curricular activities.

Rexall Award

The Rexall Drug Company provides a Mortar and Pestle Trophy to the senior student who has demonstrated outstanding qualities of both leadership and scholarship.

Extra Curricular Awards

Students who have given freely of their time for the betterment of the School in extra-curricular activities, receive extra curricular keys at the annual Honors Day Convocation.

Student Organizations (Baltimore Campus)

Student Government Alliance

The Student Government Alliance is an organization of students established for the purpose of aiding in the internal administration of the school, for organizing all extra-curricular programs and activities of the student body and for coordinating these programs and activities with those of the Faculty and Administration to foster mutual understanding and cooperation. The Executive Council of the Student Alliance is composed of the President of the Student Government Alliance, the Presidents of the Senior, Junior and Sophomore Classes, and three delegates at large, one elected from each undergraduate class.

Student Branch of the American Pharmaceutical Association

A Student Branch of the American Pharmaceutical Association has been organized in the School of Pharmacy of the University of Maryland. The purpose of the Branch is to encourage in the broadest and most liberal manner the advancement of pharmacy as a science and as a profession in accordance with the objectives stated in the Constitution of the American Pharmaceutical Association, especially in fostering education in matters involving pharmacy in all of its branches and its application and aiding in promoting the public health and welfare.

*Committee on School of Pharmacy of the Maryland
Pharmaceutical Association*

When the School of Pharmacy became a part of the State University in 1920, the Maryland Pharmaceutical Association appointed a standing committee known as the Committee on the School of Pharmacy. The duties of this group are to represent the Association in all matters pertaining to the School of Pharmacy and pharmaceutical education. The present members of the Committee are:

Frederic T. Berman, Chairman	
Stephen J. Provenza, Co-Chairman	
Francis S. Balassone	H. A. B. Dunning
Harry Bass	Harold K. Goldman
A. Lester Batie	Howard L. Gordy
Frank Block	Victor H. Morgenroth, Jr.
W. L. Brunnett	Samuel I. Raichlen
Jerome J. Cermak	Henry G. Seidman
Bernard Cherry	Simon Solomon
Irving I. Cohen	Robert P. Stotler
John A. Crozier	John F. Wannenwetsch
H. Nelson Warfield	

Alumni Association

A meeting of the graduates of the School of Pharmacy of the University of Maryland, then the Maryland College of Pharmacy, was held on May 15, 1871. At this meeting there was organized the Society of the Alumni of the Maryland College of Pharmacy. This Society continued its separate existence as such or as the Alumni Association of the Maryland College of Pharmacy until 1907, when the General Alumni Association of the University of Maryland was formed. Following the organization of the General Alumni Association, the Society remained dormant until June 4, 1926, when it was reorganized as the Alumni Association of the School of Pharmacy, University of Maryland. Each year it is more evident that interest in the Alumni Association is not only maintained, but is growing.

Officers (1959-1960)

Emory G. Helm	<i>Honorary President</i>
Victor H. Morgenroth, Jr.	<i>President</i>
Irving I. Cohen	<i>First Vice President</i>
James P. Cragg, Jr.	<i>Second Vice President</i>
Frank J. Slama	<i>Executive Secretary</i>
Mrs. Frank M. Budacz	<i>Treasurer</i>
<i>Executive Committee (Elected Members)</i>	
Samuel Portney, Chairman	
Milton A. Friedman	
Samuel A. Goldstein	
John F. Neutze	

FOUR YEAR CURRICULUM COURSES, HOURS AND CREDITS

Title and Number of Courses	First Semester				Second Semester			
	Hrs. Per Week				Hrs. Per Week			
	Didactic	Lab'y	Total	Credits	Didactic	Lab'y	Total	Credits
Freshman Year								
*Chemistry 1, 3, General Inorganic and Qualitative Analysis -----	2	6	8	4	2	6	8	4
*English 1, 2, Survey and Composition -----	3		3	3	3		3	3
*Mathematics O, Basic -----	3		3	0				
*Mathematics 10 or 15 -----	3		3	3				
*Mathematics 11 or 17 -----					3		3	3
*Modern Language 1, 2, or 6, 7, French or German -----	3		3	3	3		3	3
Pharmacy 1, 2, Orientation -----	1		1	1	1		1	1
*Speech 1, 2, Public Speaking -----	1		1	1	1		1	1
*Zoology 1, General -----	2	6	8	4				
*Zoology 4, Animal Kingdom -----					2	3	5	3
				19				18
Sophomore Year								
Chemistry 15, Quantitative Analysis -----	2	6	8	4				
†Chemistry 35, 37, Elementary Organic -----	3		3	2	3		3	2
†Chemistry 36, 38, Elementary Organic Laboratory -----		4	4	2		4	4	2
Pharmacy 21, 22, General -----	4	3	7	5	4	3	7	5
†Physics 10, 11, General -----	3	2	5	4	3	2	5	4
Physiology 22, General -----					4	3	7	5
				17				18
Junior Year								
Chemistry 53, Pharmaceutical Testing and Assaying -----					2	6	8	4
Chemistry 153, Biological -----	4	4	8	5				
Microbiology 1, Pharmaceutical -----	2	4	6	4				
Microbiology 115, Serology and Immunology -----					2	4	6	4
Pharmacognosy 51, 52, General -----	2	5	7	4	2	5	7	4
Pharmacy 51, 52, Dispensing -----	2	6	8	4	2	6	8	4
Pharmacy 61, History of Pharmacy -----	1		1	1				
Pharmacy Administration 37, Fundamentals of Economics -----					3		3	3
				18				19
Senior Year (Required)								
Chemistry 111, 113, Chemistry of Medicinal Products -----	3		3	3	3		3	3
First Aid 1, Standard -----	1		1					
Pharmacology 81, 82, General -----	3	4	7	4	3	4	7	4
Pharmacy 101, 102, Advanced Dispensing -----	2	3	5	3	2	3	5	3
Pharmacy Administration 21, Accounting -----	1	3	4	2				
Pharmacy Administration 62, Jurisprudence -----					3		3	3
Electives† -----				7				5
				19				18
†(Electives—Retail Major)								
Pharmacognosy 61, Entomology for Pharmacists -----	2	3	5	3	3		3	3
Pharmacognosy 62, Animal Health Products or -----					2	3 ^{or}	5	3
Pharmacy 132, Cosmetics -----								
Pharmacy 121, Hospital Pharmacy Administration -----	2		2	2				
or -----								
Pharmacy 81, Pharmacy Literature -----	2		2	2				
Pharmacy Administration 71, Management -----	2		2	2				
Pharmacy Administration 72, Drug Marketing -----					2		2	2
†(Electives—Pre-Graduate Major)								
†English 3, 4, Composition and World Literature -----	3		3	3	3		3	3
or -----								
*Language 6, 7, Intermediate Scientific German -----	3		3	3	3		3	3
†Mathematics 20, 21, Calculus -----	3		3	3	3		3	3
(Electives—Special Cases)								
Chemistry 99, Glassworking -----		3	3	1		3	3	1
Chemistry 112, 114, Chemistry of Medicinal Products -----		4	4	2		4	4	2

† Instruction in these courses given by the College of Arts and Sciences.

‡ The electives must be approved by the Class Advisor and Dean.

* Courses, formerly given by the College of Arts and Sciences, not offered at Baltimore after 1959-60.

FOUR YEAR CURRICULUM

SUMMARY OF HOURS AND CREDITS

Course	Didactic	Laboratory	Total	Credit hours
Freshman Year				
*Chemistry 1, 3	64	192	256	8
*English 1, 2	96		96	6
*Mathematics 10, 15	48		48	3
*Mathematics 11, 17	48		48	3
*Modern Language 1, 2 or 6, 7	96		96	6
Pharmacy 1, 2	32		32	2†
*Speech 1, 2	32		32	2
*Zoology 1, 4	64	144	208	7
Total	480	336	816	37
Sophomore Year				
Chemistry 15	32	96	128	4
Chemistry 35, 37	96		96	4
Chemistry 36, 38		128	128	4
Pharmacy 21, 22	128	96	224	10
Physics 10, 11	96	64	160	8
Physiology 22	64	48	112	6
Total	416	432	848	35
Junior Year				
Chemistry 53	32	96	128	4
Chemistry 153	64	64	128	5
Microbiology 1	32	64	96	4
Microbiology 115	32	64	96	4
Pharmacognosy 51, 52	64	160	224	8
Pharmacy 51, 52	64	192	256	8
Pharmacy 61	16		16	1
Pharmacy Administration 37	48		48	3
Total	352	640	992	37
Senior Year (Required)				
Chemistry 111, 113	96		96	6
First Aid	16		16	
Pharmacology 81, 82	96	128	224	8
Pharmacy 101, 102	64	96	160	6
Pharmacy Administration 21	16	48	64	2
Pharmacy Administration 62	48		48	3
Electives	224†	160†	384†	12
Total	560	432	992	37
(Electives—Retail Major)				
Pharmacognosy 61	32	48	80	3
Pharmacognosy 62	48		48	3
or				
Pharmacy 132	32	48	80	3
Pharmacy 121	32		32	2
or				
Pharmacy 81	32		32	2
Pharmacy Administration 71	32		32	2
Pharmacy Administration 72	32		32	2
(Electives—Pre-Graduate Major)				
English 3, 4	96		96	6
or				
*Language 6, 7	96		96	6
Mathematics 20, 21	96		96	6
(Electives—Special Cases)				
Chemistry 99		96	96	2
Chemistry 112, 114		128	128	4
SUMMARY				
Freshman Year	480	336	816	37
Sophomore Year	416	432	848	35
Junior Year	352	640	992	37
Senior Year	560	432	992	37
Total	1,808	1,840	3,648	146**

† Average.

‡ Required of students entering in September 1956 and thereafter.

*Courses, formerly given by the College of Arts and Sciences, not offered at Baltimore after 1959-60.

** A minimum of 144 credits required for students entered prior to September 1956 and 146 credits for those entering in September 1956 and thereafter.

PROFESSIONAL PROGRAM CURRICULUM COURSES, HOURS AND CREDITS

Title and Number of Courses	First Semester Hrs. Per Week				Second Semester Hrs. Per Week			
	Didactic	Lab'y	Total	Credits	Didactic	Lab'y	Total	Credits
First Year (Required)								
Anatomy 31, Mammalian Anatomy and Histology -----	2	6	8	4				
Chemistry 35, 37, Elementary Organic Chemistry -----	3		3	2	3		3	2
Chemistry 36, 38, Elementary Organic Laboratory -----		4	4	2		4	4	2
Pharmacy 31, 32, General Pharmacy -----	3	3	6	4	3	3	6	4
Pharmacy 33, Inorganic Pharmacy -----	2		2	2				
Pharmacy 35, Professional Communications -----	3		3	3				
Pharmacy 38, History of Pharmacy -----					3		3	3
Pharmacy Administration 36, Accounting -----					2	3	5	3
Pharmaceutical Chemistry 32, Pharmaceutical Testing and Assaying -----					2	6	8	4
				17				18
Second Year (Required)								
Biochemistry 143, Principles of Biochemistry ---	4	4	8	5				
Microbiology 41, Pharmaceutical Microbiology ---	2	4	6	4				
Microbiology 146, Serology, Immunology, Public Health and Parasitology -----					2	4	6	4
Pharmacognosy 41, 42, General Pharmacognosy -----	2	3	5	3	2	3	5	3
Pharmacy 43, Organic Pharmacy -----	2		2	2				
Pharmacy 44, Dispensing Pharmacy I -----					3	3	6	4
Physiology 142, General Physiology -----					3	6	9	5
‡Electives -----				3-4				3-4
				17-18				19-20
‡(Electives—Retail Major)								
Pharmacy Administration 41, Marketing -----	3		3	3				
Pharmacy Administration 42, Pharmacy Management I -----					2	3	5	3
‡(Electives—Pre-Graduate)								
Mathematics 20, 21, Calculus -----	4		4	4	4		4	4
Third Year (Required)								
Pharmacology 155, 156, General Pharmacology -----	3	3	6	4	4	3	7	5
Pharmacy 55, 56, Pharmaceutical Formulation Problems -----	1		1	1	1		1	1
or								
Pharmacy 151, Manufacturing Pharmacy -----	1	3	4	2				
Pharmacy 153, 154, Dispensing II, III -----	2	3	5	3	2	3	5	3
Pharmacy Administration 51, 52, Pharmaceutical Jurisprudence -----	2		2	2	2		2	2
Pharmaceutical Chemistry 151, 152, Chemistry of Medicinal Products -----	3		3	3	3		3	3
‡Electives -----				5				5
				18-19				19-18
‡(Electives—Retail Major)								
Pharmacognosy 51, Entomology for Pharmacists -----	2	3	5	3	3		3	3
Pharmacognosy 52, Animal Health Products -----								
or								
Pharmacy 156, Cosmetics and Dermatological Preparations -----					2	3	5	3
Pharmacy Administration 53, 54, Pharmacy Management II, III -----	2		2	2	2		2	2
‡(Electives—Hospital Major)								
Pharmacognosy 51, Entomology for Pharmacists -----	2	3	5	3				
Pharmacy 153, Hospital Pharmacy Administration -----	2		2	2				
Pharmacy 156, Cosmetics and Dermatological Preparations -----					2	3	5	3
Pharmacy 158, Orientation to Hospital Administration -----					2		2	2
‡(Electives—Pre-Graduate Major)								
Chemistry 187, 189, Physical Chemistry -----	3		3	3	3		3	3
Chemistry 188, 190, Physical Chemistry Laboratory -----		6	6	2		6	6	2

‡ The electives must be approved by the Class Advisor and Dean.

PROFESSIONAL PROGRAM CURRICULUM

SUMMARY OF HOURS AND CREDITS

Course	Didactic	Laboratory	Total	Credit hours
First Year (Required)				
Anatomy 31 -----	64	192	256	4
Chemistry 35, 37 -----	96	-----	96	4
Chemistry 36, 38 -----	-----	128	128	4
Pharmacy 31, 32 -----	96	96	192	8
Pharmacy 33 -----	32	-----	32	2
Pharmacy 35 -----	48	-----	48	3
Pharmacy 38 -----	48	-----	48	3
Pharmacy Administration 36 -----	32	48	80	3
Pharmacy Administration 32 -----	32	96	128	4
Total -----	448	560	1,008	35
Second Year (Required)				
Biochemistry 143 -----	64	64	128	5
Microbiology 41 -----	32	64	96	4
Microbiology 146 -----	32	64	96	4
Pharmacognosy 41, 42 -----	64	96	160	6
Pharmacy 43 -----	32	-----	32	2
Pharmacy 44 -----	48	48	96	4
Physiology 142 -----	48	64	112	5
Electives -----	104†	24†	128†	6-8
Total -----	424	424	848	36-38
(Electives—Retail Major)				
Pharmacy Administration 41 -----	48	-----	48	3
Pharmacy Administration 42 -----	32	48	80	3
(Electives—Pre-Graduate)				
Mathematics 20, 21 -----	128	-----	128	8
Third Year (Required)				
Pharmacology 155, 156 -----	112	96	208	9
Pharmacy 55, 56 -----	32	-----	32	2
or -----	-----	or -----	-----	-----
Pharmacy 151 -----	16	48	64	2
Pharmacy 153, 154 -----	64	96	160	6
Pharmacy Administration 51, 52 -----	64	-----	64	4
Pharmaceutical Chemistry 151, 152 -----	96	-----	96	6
Electives -----	120†	120†	240†	10
Total -----	504	360	864	37
(Electives—Retail Major)				
Pharmacognosy 51 -----	32	48	80	3
Pharmacognosy 52 -----	48	-----	48	3
or -----	-----	or -----	-----	-----
Pharmacy 156 -----	32	48	80	3
Pharmacy Administration 53, 54 -----	64	-----	64	4
(Electives—Hospital Major)				
Pharmacognosy 51 -----	32	48	80	3
Pharmacy 153 -----	32	-----	32	2
Pharmacy 156 -----	32	48	80	3
Pharmacy 158 -----	32	-----	32	2
(Electives—Pre-Graduate)				
Chem. 187, 189 -----	96	-----	96	6
Chem. 188, 190 -----	-----	192	192	4
SUMMARY				
First Year -----	448	560	1,008	35
Second Year -----	424	424	848	36-38
Third Year -----	504	360	864	37
Total -----	1,376	1,344	2,720	108-110*

† Average.

* A minimum of 108 credits required for students selecting either the Retail Major Course or the Hospital Major Course. A minimum of 110 credits required for students selecting the Pre-Graduate Course.

DESCRIPTION OF COURSES**

FOUR YEAR CURRICULUM

CHEMISTRY

*1, 3. *General Inorganic Chemistry and Qualitative Analysis*—(4, 4)

Freshman year, two lectures, two laboratories. (Miller and Shroff.)

A study of the metals and non-metals with emphasis on chemical theory and important generalizations. The laboratory work deals with fundamental principles, the preparation and purification of compounds, and the systematic qualitative analysis of the more common cations and anions.

35, 37. *Elementary Organic Chemistry*—(2, 2)

Sophomore year, two lectures (Miller, Chalet, Jalil, and Kerridge.)

Prerequisite—Chemistry 1, 3. A study of the fundamentals of organic chemistry.

36, 38. *Elementary Organic Laboratory*—(2, 2)

Sophomore year, one laboratory. (Miller, Chalet, Jalil, Kerridge.)

Prerequisite—Chemistry 35, 37 or current registration therein. A study of the general procedures used in organic laboratory.

15. *Quantitative Analysis*—(4)

Sophomore year, first semester, two lectures and two laboratories.

(Doorenbos, Kumkumian, and Wang.)

Prerequisite—Chemistry 1, 3. A study of the gravimetric and volumetric procedures and theory, and their application to pharmaceutical analyses.

53. *Pharmaceutical Testing and Assaying*—(4)

Junior year, second semester, two lectures and two laboratories.

(Doorenbos, Kumkumian, and Wang.)

Prerequisites—Chemistry 15, 35, 37, or concurrent registration therein. Quantitative methods applied to the chemical assay of crude drugs and of official preparations, with an introduction to instrumental methods.

99. *Glassworking*—(1, 1)

Laboratory, senior year, either semester.

(Miller.)

Prerequisite—Consent of the instructor. Simple operations in the manipulation of glass, repair and construction of apparatus.

For Graduates and Advanced Undergraduates

111, 113. *Chemistry of Medicinal Products*—(3, 3)

Senior year, three lectures.

(Doorenbos.)

Prerequisite—Chemistry 35, 37, 53. A survey of the structural relationships, the synthesis and chemical properties of medicinal products.

*Courses, formerly given by the College of Arts and Sciences, not offered at Baltimore after 1959-60.

**Courses intended primarily for sophomores are numbered 1-49; for juniors and seniors 50-99; for advanced undergraduates and graduates 100-199; and for graduates only 200-399.

The semester hour, which is the unit of credit, is the equivalent of a subject pursued one period a week for one semester. A laboratory period is equivalent to one lecture or recitation period.

141, 143. *Advanced Organic Chemistry*—(2, 2)

Two lectures.

(Miller.)

Prerequisites—Chemistry 35, 36, 37, 38. An advanced study of the compounds of carbon.

142, 144. *Advanced Organic Laboratory*—(2, 2)

Any one or two semesters.

(Miller.)

Prerequisite—Chemistry 37, 38 or equivalent. Laboratory work devoted to more difficult organic preparations and a study of the quantitative determination of carbon, hydrogen, nitrogen and halogen in organic compounds.

146, 148. *Identification of Organic Compounds*—(2, 2)

One lecture, two laboratories.

(Miller.)

Prerequisite—Chemistry 113, 114, or equivalent. The systematic identification of organic compounds.

153. *Biological Chemistry*—(5)

Junior year, first semester, four lectures and one laboratory.

(Herbst, Rudolph, Emery, and Brown.)

Prerequisites—Chemistry 35, 37. Lectures and laboratory exercises devoted to the composition of living organisms and the chemical and physical processes which occur during health and in disease.

187, 189. *Physical Chemistry*—(3, 3)

Three lectures.

(Estabrook.)

Prerequisites—Chemistry 15, 35, 37, Physics 10, 11 and Mathematics 20, 21. A study of the laws and theories of chemistry, including the gas laws, kinetic theory, liquids, solutions, elementary thermodynamics, thermo-chemistry, equilibrium, chemical kinetics and electro-chemistry.

188, 190. *Physical Chemistry*—(2, 2)

Two laboratories.

(Estabrook.)

Prerequisites—Chemistry 187, 189 or may be taken simultaneously with Chemistry 187, 189. Quantitative experiments are performed which demonstrate physio-chemical principles, and acquaint the student with precision apparatus.

For Graduates

Chemistry 141, 143, or its equivalent is a prerequisite for any of the following courses, except Chemistry 230.

230. *Seminar*—(1)

Each semester.

Required of students majoring in pharmaceutical chemistry. Reports of progress and survey of recent developments in chemistry.

240. *Stereochemistry*—(2)

Two lectures.

(Miller.)

A study of the principles of stereochemistry of organic compounds.

242. *Heterocyclic Chemistry*—(2)

Two lectures.

(Doorenbos.)

A study of the chemistry and synthesis of heterocyclic compounds.

250. *Steroids*—(2)

Two lectures.

(Doorenbos.)

A study of the synthesis and structure determination of steroids and the application of modern chemical concepts to the chemistry of steroids.

252. *Alkaloids*—(2)

Two lectures.

(Miller.)

A study of the principles involved in structure determination, chemistry and synthesis of the major alkaloid classes.

255. *Instrumental Analysis*—(2)

Either semester, two laboratories.

(Doorenbos and Miller.)

Prerequisite—Chemistry 187, 188, 189, 190 or equivalent.

399. *Research in Pharmaceutical Chemistry*

Credit determined by the amount and quality of work performed.

ENGLISH

*1, 2. *Survey and Composition*—(3, 3)

Freshman year, three lectures.

(Ballman.)

Prerequisite—Four units of high school English. A study of style, syntax, spelling and punctuation, combined with a historical study of English and American literature of the nineteenth and twentieth centuries. Written themes, book reviews and exercises.

3, 4. *Composition and World Literature*—(3, 3)

Elective, three lectures.

(Ballman.)

Prerequisite—English 1, 2. Practice in composition. An introduction to world literature, foreign classics being read in translation.

SPEECH

*1, 2. *Public Speaking*—(1, 1)

Freshman year, one lecture.

(De Haven.)

The preparation and delivery of short original speeches; outside readings; reports, etc.

FIRST AID

1. *Standard First Aid Course*

Senior year, first semester, one lecture, one demonstration. Gregson, instructor from the Baltimore Chapter of the American Red Cross.

MATHEMATICS

*0. *Basic Mathematics*—(0)

Freshman year, first semester, three lectures.

(Richeson.)

Required of students whose curriculum calls for Math 10 and who fail the qualifying examination for this course. The fundamental principles of algebra.

*Courses, formerly given by the College of Arts and Sciences, not offered at Baltimore after 1959-60.

University of Maryland

*10. *Algebra*—(3)

Freshman year, first and second semesters, three lectures. (Richeson.)

Prerequisite—one unit of algebra. Fundamental operations, factoring, fractions, linear equations, exponents and radicals, logarithms, quadratic equations, variation, binomial theorem, and theory of equations.

*11. *Trigonometry and Analytic Geometry*—(3)

Freshman year, second semester, three lectures. (Richeson.)

Prerequisite—Mathematics 10 or 15. Required of those students who do not offer one-half unit of trigonometry. Trigonometric functions, identities, the radian and mil, graphs, addition formulas, solution of triangles, coordinates, locus problems, the straight line and circle, conic sections and graphs.

*15. *College Algebra*—(3)

Freshman year, first semester, three lectures. (Richeson.)

Prerequisite—High school algebra completed. Fundamental operations, variation, functions and graphs, quadratic equations, theory of equations, binomial theorem, complex numbers, logarithms, determinants and progressions.

*17. *Analytic Geometry*—(3)

Freshman year, second semester, three lectures. (Richeson.)

Prerequisite—High school trigonometry and Mathematics 15. Coordinates, locus problems, the straight line and circle, graphs, transformation of coordinates, conic sections, parametric equations, transcendental equations, and solid analytic geometry.

20, 21. *Calculus*—(3, 3)

Three lectures. (Richeson.)

Prerequisite—Mathematics 15 and 17 and approval of instructor. Limits, derivatives, differentials, maxima and minima, curve sketching, rates, curvature, kinematics, integration, geometric and physical applications of integration, partial derivatives, space geometry, multiple integrals, infinite series and differential equations. Given in alternate years.

For Graduates and Advanced Undergraduates

Math. 130. Probability. (3)

First semester. Prerequisite, Math. 21 or equivalent. Combinatory analysis, total, compound, and inverse probability, continuous distributions, theorems of Bernoulli and Laplace, theory of errors. (Staff.)

Math. 132. Mathematical Statistics. (3)

Second semester. Prerequisite, Math. 21 or equivalent. Frequency distributions and their parameters, multivariate analysis and correlation, theory of sampling, analysis of variance, statistical inference. (Staff.)

*Courses, formerly given by the College of Arts and Sciences, not offered at Baltimore after 1959-60.

MICROBIOLOGY

1. *Pharmaceutical Microbiology*—(4)

Junior year, first semester, two lectures, two laboratories. (Shay and Becker.)

Introduction to general microbiology with special emphasis on the study of pathogenic microorganisms, including the public health aspects of the prevention and control of communicable diseases.

For Graduates and Advanced Undergraduates

115. *Serology and Immunology*—(4)

Junior year, second semester, two lectures, two laboratories. (Shay and Becker.)

Prerequisite—Microbiology 1. A study of the principles of immunity, including the preparation and use of biological products employed in the prevention and treatment of infectious diseases.

For Graduates

200, 201. *Chemotherapy*—(1, 1)

One lecture. (Given in alternate years.) (Shay.)

A study of the chemistry, toxicity, pharmacology and therapeutic value of drugs employed in the treatment of parasitic diseases.

202, 203. *Reagents and Media*—(1, 1)

One lecture. (Given in alternate years.) (Shay.)

A study of the methods of preparation and use of microbiological reagents and media.

210. *Special Problems in Microbiology*

A laboratory course on selected problems in microbiology. Credit determined by the amount and quality of work performed. (Shay.)

211. *Public Health*—(1-2)

One lecture. (Shay.)

Prerequisite—Microbiology 1, 115. Lectures and discussions on the organization and administration of state and municipal health departments and private health agencies. The courses will also include a study of laboratory methods.

399. *Research in Microbiology*

Credit determined by the amount and quality of work performed. (Shay.)

MODERN LANGUAGES

*1, 2. *Elementary French*—(3, 3)

Freshman year, three lectures. (Schradiack.)

Students who offer two units in French for entrance, but whose preparation is not adequate for second-year French, receive half credit for this course. Elements of grammar, composition, pronunciation and translation.

*Courses, formerly given by the College of Arts and Sciences, not offered at Baltimore after 1959-60.

*1, 2. *Elementary German*—(3, 3)

Freshman year, three lectures.

(Schradiack.)

Students who offer two units in German for entrance, but whose preparation is not adequate for second-year German receive half credit for this course. Elements of grammar, composition, pronunciation and translation.

Students will be assigned to one of the two languages by the department. The assignment will ordinarily be made on the basis of the student's previous training.

Six semester hours College credit in Spanish will be accepted as satisfying the Modern Language requirement.

*6, 7. *Intermediate Scientific French*—(3, 3)

Three lectures.

(Schradiack.)

Prerequisite—French 1 and 2 or equivalent. Rapid grammar review, exercises in pronunciation, reading of scientific texts.

*6, 7. *Intermediate Scientific German*—(3, 3)

Three lectures.

(Schradiack.)

Prerequisite—German 1 and 2 or equivalent. Review of grammar and reading of scientific texts.

PHARMACOGNOSY

51. *Pharmacognosy, General*—(4)

Junior year, first semester, two lectures and two laboratories.

(Slama and Kokoski.)

Prerequisites—Zoology 4, Chemistry 35, 36, 37, 38. A study of the cultivation, collection, and commerce of drugs of animal and vegetable origin with special emphasis on the physical, microscopical, and chemical characteristics used in their identification and in the detection of adulteration.

52. *Pharmacognosy, General*—(4)

Junior year, second semester, two lectures and two laboratories.

(Slama and Kokoski.)

Prerequisites—Zoology 4; Chemistry 35, 36, 37, 38; Pharmacognosy 51. A continuation of Pharmacognosy 51 with instruction covering antibiotics, allergy-producing pollens, insecticides, fungicides, rodenticides, weedicides, etc.

61. *Pharmacognosy. Entomology for Pharmacists*—(3)

Senior year, first semester, two lectures, and one laboratory.

(Slama and Kokoski.)

Prerequisites—Zoology 4; Chemistry 35, 36, 37, 38; Pharmacognosy 51, 52. A study of the principal types of pests commonly found in the household and in the industries, including those which attack farm and garden crops; their recognition, life history, habits, and methods of control.

62. *Pharmacognosy. Animal Health Products*—(3)

Senior year, second semester, three lectures.

(Slama.)

Prerequisites—Zoology 4; Physiology 22; Microbiology 1, 115; Pharmacology 81. A study of the principal therapeutic agents that are used in the treatment and prevention of the more important animal diseases.

*Courses, formerly given by the College of Arts and Sciences, not offered at Baltimore after 1959-60.

For Graduates and Advanced Undergraduates

101, 102. *Taxonomy of the Higher Plants*—(2, 2)
One lecture and one laboratory. Given in alternate years. (Slama.)

Prerequisite—Pharmacognosy 51, 52. A study of the kinds of seed plants and ferns, their classifications, and field work on local flora. Instruction will be given in the preparation of an herbarium.

111, 113. *Plant Anatomy*—(2, 2)
Two lectures a week. (Slama.)

Prerequisites—Pharmacognosy 51, 52.

112, 114. *Plant Anatomy*—(2, 2)
Two laboratory periods a week. (Slama.)

Prerequisites—Pharmacognosy 51, 52, Pharmacognosy 111, 113. Lectures and laboratory work covering advanced plant anatomy with special emphasis placed on the structure of roots, stems, and leaves of vascular plants.

For Graduates

201, 202. *Advanced Study of Vegetable Powders*—(4, 4)
Two lectures and two laboratories. (Slama.)

Prerequisites—Pharmacognosy 111, 112. A study of powdered vegetable drugs and spices from the structural and microchemical standpoints, including practice in identification and detection of adulterants. Given in alternate years.

211, 212. *Advanced Pharmacognosy*—(4, 4)
Two lectures and two laboratories. (Slama.)

Prerequisites—Pharmacognosy 111, 112. A study of many crude drugs not ordinarily studied in other pharmacognosy courses. Special attention will be given to practical problems and to the identification and detection of adulterants.

399. *Research in Pharmacognosy*
Credit according to the amount and quality of work performed. (Slama.)

PHARMACOLOGY

81, 82. *Pharmacology, General*—(4, 4)
Senior year, three lectures and one laboratory.
(Ichniowski, Gittinger, Finn and Heifetz.)

Prerequisite—Physiology 22, Biological Chemistry 153. A study of the pharmacology, toxicology and therapeutic uses of medicinal substances, including methods of biological assay, with special reference to the drugs and preparations of the United States Pharmacopoeia and the National Formulary.

For Graduates and Advanced Undergraduates

111. *Official Methods of Biological Assay*—(4)
Two lectures and two laboratories. (Ichniowski and Gittinger.)

Prerequisite—Pharmacology 81, 82. A study of the methods of biological assay official in the United States Pharmacopoeia and the National Formulary.

For Graduates

201, 202. *Methods of Biological Assay*—(4, 4)
Laboratory and conferences, first and second semesters. (Ichniowski.)
Prerequisite—Pharmacology 111. Offered in alternate years.

211, 212. *Special Studies in Pharmacodynamics*—(4, 4)
Laboratory and conferences, first and second semesters. (Ichniowski.)
Prerequisite—Pharmacology 81 and 82 and the approval of the instructor. Offered in alternate years.

221, 222. *Special Studies in Biological Assay Methods*—(2-4), (2-4)
Credit according to the amount of work undertaken after consultation with the instructor. Conferences and laboratory work. (Ichniowski.)
Prerequisite—Pharmacology 111, 201, 202. Special problems in the development of biological assay methods and comparative standards.

399. *Research in Pharmacology*
Properly qualified students may arrange with the instructor for credit and hours. (Ichniowski.)

PHARMACY

1, 2. *Pharmacy Orientation*—(1, 1)
Freshman year, one lecture. (Levine.)

An introduction to pharmacy for the beginning student. The course will include the various subject matter that a pharmacy student will undertake as well as the opportunities in pharmacy. Guest lecturers will be invited from the various fields of pharmacy.

21, 22. *Pharmacy, General*—(5, 5)
Sophomore year, four lectures and one laboratory. (Levine, Reier, and Becker.)

Prerequisite—Pharmacy 1, 2 or may be taken simultaneously with Pharmacy 1, 2. A study of all theory of pharmaceutical manipulations, including mathematical calculations, and the practical application of the theory to the manufacture of galenical preparations.

51, 52. *Pharmacy, Dispensing*—(4, 4)
Junior year, two lectures and two laboratories. (Shangraw, Patel, Reier, and Marlowe.)

Prerequisites—Pharmacy 21, 22. A study of the compounding and dispensing of prescriptions.

61. *History of Pharmacy*—(1)
Junior year, first semester, one lecture. (Shangraw)

A study of the history of pharmacy from its beginning, with special emphasis on the history of American Pharmacy.

81. *Pharmacy Literature*—(2)
Senior year, first semester, two lectures. (Levine.)

A study of important periodicals and currently published papers concerned with subjects of interest to pharmacists.

For Advanced Undergraduates and Graduates

101, 102. *Advanced Dispensing Pharmacy*—(3, 3)

Senior year, two lectures and one laboratory.

(Allen, Patel, and Cragg.)

Prerequisites—Pharmacy 21, 22, 51, 52. A study of the compounding of new medicinal ingredients and dispensing aids used in modern professional pharmacy, including the preparation of some important classes of pharmaceuticals on a commercial scale.

121. *Hospital Pharmacy Administration*—(2)

Senior year, first semester, two lectures.

(Purdum.)

A study of hospital pharmacy practice and administration.

132. *Cosmetics*—(3)

Senior year, second semester, two lectures and one laboratory.

(Allen, Marlowe, and Becker.)

Prerequisites—Pharmacy 21, 22, 51, 52, and 101. A study of the composition and manufacture of cosmetic preparations including laboratory work in the formulation of these products.

For Graduates

201, 202. *Manufacturing Pharmacy*—(2, 2)

Two lectures. Given in alternate years.

(Shangraw.)

Prerequisites—Pharmacy 101, 102, 132. A study of manufacturing processes and equipment employed in the manufacture of pharmaceuticals on a commercial scale.

203, 204. *Manufacturing Pharmacy*—(2, 2)

Two laboratories.

(Shangraw.)

Prerequisite 201, 202, or may be taken simultaneously with Pharmacy 201, 202. Laboratory work dealing with the preparation of useful and important pharmaceuticals in large quantities.

205. *Manufacturing Pharmacy Control*—(3)

Three lectures. Given in alternate years.

(Foss.)

A study of the specifications, inspection, sampling, packaging and labeling of drugs from their receipt to their shipping by pharmaceutical manufacturing plants. Includes detailed consideration of sanitary standards, the Federal Food, Drug and Cosmetic Act, and other laws affecting the production and distribution of pharmaceutical products.

207, 208. *Physical Pharmacy*—(2, 2)

Two lectures a week.

(Shangraw.)

Prerequisites—Physical Chemistry 187, 188, 189, 190. A study of pharmaceutical systems utilizing the fundamentals of physical chemistry.

211, 212. *Survey of Pharmaceutical Literature*—(1, 1)

One lecture. Given in alternate years.

(Allen.)

Lectures and topics on the literature pertaining to pharmacy, with special reference to the origin and development of the works of drug standards and the pharmaceutical periodicals.

215, 216. *Product Development*—(2, 2)

Two laboratories.

(Allen.)

Prerequisites—Pharmacy 132, 201, 202, 203, 204. A study of the development of new pharmaceutical preparations and cosmetics suitable for marketing.

221, 222. *History of Pharmacy*—(2, 2)

Two lectures.

(Purdum.)

Lectures and assignments on the development of pharmacy in America and the principal countries of Europe. Given in alternate years.

230. *Pharmaceutical Seminar*—(1)

Each semester.

(Allen.)

Required of students majoring in pharmacy. Reports of progress in research and surveys of recent developments in pharmacy.

231, 232. *Special Problems in Pharmaceutical Technology*—(2, 2)

Two laboratories.

(Allen and Purdum.)

A study of technical problems in the stabilization and preservation of pharmaceuticals and the various methods of compounding special prescriptions.

399. *Research in Pharmacy*

Credit and hours to be arranged.

(Foss, Purdum, Allen, and Shangraw.)

PHARMACY ADMINISTRATION

21. *Accounting*—(2)

Senior year, first semester, one lecture and one laboratory.

(Leavitt and Marlowe.)

Prerequisite—Pharmacy Administration 37. The analysis of financial and operating statements with a study of the fundamental principles of accounting, including practice in bookkeeping.

37. *Fundamentals of Economics*—(3)

Junior year, second semester, three lectures.

(Leavitt.)

A study of the general fundamentals of Economics—production, exchange, distribution and consumption of wealth, together with methods of financing, government and the consideration of economic systems.

62. *Jurisprudence*—(3)

Senior year, second semester, three lectures.

(Kaufman.)

Fundamentals of law of importance to pharmacists; Federal and State Laws and Regulations pertaining to the sale of drugs, narcotics, poisons, cosmetics and pharmaceutical preparations; Law of Contracts, Negotiable Instruments, Sales, Agency and Partnerships.

71. *Management*—(2)

Senior year, first semester, two lectures.

(Leavitt.)

Prerequisite—Pharmacy Administration 37. A study of the business problems arising in the operation of a retail pharmacy, including ownership organization, financing, leasing, insurance, purchasing, pricing, code marking and control of inventory.

72. *Drug Marketing*—(2)

Senior year, second semester, two lectures.

(Leavitt.)

Prerequisite—Pharmacy Administration 37. A study of marketing, marketing research, advertising, selling and salesmanship, merchandising, channels of distribution, wholesaling, retailing and personnel management.

PHYSICS

10, 11. *General Physics*—(4, 4)

Sophomore year, three lectures, one laboratory.

(Estabrook and Hooper.)

Prerequisites—Mathematics 10, 11 or 15, 17. A study of the principles of mechanics, heat, wave motion, sound, light and electricity.

For Graduates and Advanced Undergraduates

104, 105. *Electricity and Magnetism*—(3, 3)

Two lectures, one laboratory.

(Estabrook.)

Prerequisites—Physics 10, 11 and Mathematics 20, 21. Given according to demand.

126. *Kinetic Theory of Gases*—(3)

Three lectures a week.

Prerequisites—Mathematics 21, and Physical Chemistry 189 and 190. Given according to demand.

For Graduates

200, 201. *Introduction to Theoretical Physics*—(5, 5)

Five lectures.

(Estabrook.)

Prerequisites—Advanced standing in Physics. Given according to demand.

PHYSIOLOGY

22. *Physiology, General*—(5)

Sophomore year, second semester, three lectures, two laboratories.

(Costello and Becker.)

Prerequisite—Zoology 1, 4. A course in the fundamentals of human physiology, including neurophysiology, the heart and circulation, respiration, digestion, the kidney, endocrine glands, muscle physiology, structure and permeability of the plasma membrane, and metabolism.

For Graduates

243. *Cellular Physiology and Cytogenetics*—(2)

Two Lectures—First Semester.

(Costello and Layne.)

Prerequisites—Chemistry 153, Physiology 22, Consent of Instructor. The lectures will relate to the physical and chemical properties of protoplasm to the functional

problems of the plasma membrane, cytoplasm, golgi apparatus, microsomes, nucleus, mitochondrial structure and their contributions to the integrated cellular activity. The physical and chemical phenomena of cell division and inheritance will be discussed.

244. *Current Problems in Cellular Physiology and Cytogenetics*—(1)

One Lecture—Second Semester.

(Costello and Layne.)

Prerequisites—Physiology 243, Consent of instructor. A continuation of Physiology 243 and designed to introduce the student to current thought processes of cellular physiology and cytogenetics. By means of lectures and assigned student discussion, current research trends in the field will be discussed in detail.

399. *Research in Physiology*

Credit determined by the amount and quality of work performed.

(Costello.)

ZOOLOGY

*1. *Zoology, General*—(4)

Freshman, year, first semester, two lectures and two laboratories.

(Costello and Becker.)

This course deals with basic principles of animal life and uses a study of the anatomy and physiology of the vertebrates to demonstrate these principles.

*4. *Zoology, Animal Kingdom*—(3)

Freshman year, second semester, two lectures and one laboratory.

(Costello and Becker)

A survey of the animal kingdom with special emphasis on parasites, insects and other forms that have special economic interrelationships with man.

Both courses in zoology are intended to be practical in nature and act as a firm foundation for later required courses.

*Courses, formerly given by the College of Arts and Sciences, not offered at Baltimore after 1959-60.

ROLL OF STUDENTS, SESSION 1959-60

Graduate Students †

Adamo, Norma Jean	Florida
**Becker, Earl	Maryland
Becker, John Wilbert	Maryland
Becker, Stanley Leonard	Maryland
Brown, Harry James	Maryland
***Chaiet, Melvin	Maryland
Chen, Su Chien	China
Darling, Macy Martin	Maryland
Dorn, Conrad Peter, Jr.	Maryland
Finn, William James	Maryland
*Havranek, Robert Edward	New York
Heifetz, Carl Louis	Maryland
King, Stonewall Corput, Jr.	Georgia
Kokoski, Robert John	Maryland
Kumkumian, Charles Simon	Maryland
Levine, Phillip Julian	Maryland
Marlowe, Edward	New York
Morrison, John Oliver	Pennsylvania
Patel, Nagindas K.	India
Patel, Vithalbhai C.	India
**Paul, Janice L.	Wyoming
Prouty, Richard W.	Maryland
Reier, George Eugene	Maryland
Sacks, Sylvan Leonard	Maryland
Shroff, Arvin P.	India
***Spear, Murray Charles	Maryland
Tamorra, Christopher Richard	District of Columbia
Thomason, Melvin Richard	Colorado
Wang, Theodore H. T.	China
Zeledon, Alvaro Francisco	Costa Rica

Senior Class

Barnes, Attison Leonard, Jr.	Maryland
Belford, Stanley Harvey	Maryland
Berger, Jerome Alvin	Maryland
***Bozman, Kenneth Bennett	Maryland
Clayman, Jerome Harris	Maryland
Conklin, Nancy Carole	Maryland
Davies, Joseph William	Maryland
Friedman, Louis Joseph	Maryland
Glick, Henry Joseph	Maryland

†Registered in Graduate School.

*First semester only.

**Second semester only.

***Did not attend entire session.

Senior Class (continued)

Goldner, Ronald	Maryland
Grebow, Martin David	Maryland
Handelman, Joseph Gold	Maryland
Hoffman, Marta	Maryland
Horwits, Leonard	Maryland
Jordan, John Terence	Maryland
Kenney, Fern Eugene	Maryland
Kronsberg, Ronald Herbert	Maryland
Lee, Toon	District of Columbia
Lerner, Joseph Herman	Maryland
Levin, Irvin Isaac	Maryland
Lichter, Samuel	Maryland
Minster, Howard Manuel	Maryland
Morton, Joseph Harris	Maryland
Nowakowski, Ronald Joseph	Maryland
Palmere, Anthony Michael	Maryland
Pilquist, Richard Morris	Maryland
Plempel, Alfred Clair, Jr.	Maryland
Raksin, Irving Jacob	Maryland
Rapkin, Harvey Morton	Maryland
Raschka, Theodore Lee	Maryland
Richman, M. David	Maryland
Sadowski, Leonard Joseph	Maryland
Scali, Peter Paul	New York
Sclar, Morton Jerome	Maryland
Shargel, Martin Chaim	Maryland
Sherr, Allan Robert	Maryland
Sherr, Bernard Erwin	Maryland
Shpritz, Esther Harriet	Maryland
Snyder, Larry Albert	Maryland
Stank, Kenneth Edward	Maryland
Tokar, Elliot Sanford	Maryland
Tracey, Jessie Lois	Maryland
Warfield, Albert Harry	Maryland
Warthen, John David, Jr.	Maryland

Junior Class

Amass, Arnold Leroy	Maryland
Barron, David D.	Maryland
Blaustein, Arnold Lee	Maryland
Block, Lawrence Yale	Maryland
Chan, Kenneth Young	Maryland
Contrino, Gabriel Michael	Maryland
Cwynar, Frank	Maryland
Diamond, Louis	Maryland
DiPaula, Vincent R.	Maryland
Eng, June	Maryland
Evert, Helen Elaine	Maryland

Junior Class (continued)

Gordon, Gerald Stanford	Maryland
Greenblatt, Elliott	Maryland
Grossblatt, Norton Joel	Maryland
Hamet, Harry	Maryland
Heinrich, William Joseph	Maryland
Huber, George Herman	Maryland
Kadish, Aaron	Maryland
Kushnick, Marvin Stanley	Maryland
Lauer, Stephen LeBrun	Maryland
Lerner, Beryl	Maryland
Levin, David Gerald	Maryland
Maschas, Constantine Nick	Maryland
McKenna, Richard Sterling	Maryland
McNeill, Douglas Wells	Maryland
Phillips, Janice Rae	Maryland
Reisenweber, Harvey Donaldson	Maryland
Robinson, Zoe Carroll	Maryland
Rosen, Leon	Maryland
Sappe, Nancy Carol	Maryland
Sermuksnis, Milda Irena	Maryland
Silen, Irvin	Maryland
Smith, Dennis Boyd	Maryland
Sopher, Martin Joseph	Maryland
Stiekman, Robert Benjamin	Maryland
Stime, Peyton Orenzo	Maryland
Struntz, James Patrick	Maryland
Tabak, William	Maryland
Tamberino, Frank Joseph	Maryland
Tinelli, Vito, Jr.	Maryland
Turnbull, Andrew, Jr.	Maryland
Walkling, Walter Douglas	Maryland
Wankel, Richard Allan	Maryland
***Weiner, Kenneth Sidney	Maryland
Weiner, Phillip Paul	Maryland
Yospa, Irvin	Maryland
Zervitz, Warren Gerald	Maryland

Sophomore Class

Amernick, Hammond Hersh	Maryland
Augsburger, Larry Louis	Maryland
***Austraw, Henry Harrison	Maryland
Baker, Herman Louis	Maryland
Becker, Edward Philip	Maryland
***Bishow, Joseph Jesse	Maryland
Block, Lawrence Howard	Maryland
Boatman, Ernest Allan	Maryland

***Did not attend entire session.

Sophomore Class (continued)

**	Calas, Andre	Maryland
	Clinger, Richard Graham	Pennsylvania
***	Cohen, Sidney Irving	Maryland
	Cornias, William N.	Maryland
	Gandel, Stephen Jay	Maryland
	Gibbon, Nancy Lee	Maryland
***	Gross, Thomas Hollen	Maryland
	Grubb, John Eastman	Maryland
	Gubinsky, Louis	Maryland
	Hamet, Sydney Herbert	Maryland
	Harrison, Gordon Marshall	Maryland
	Henderson, Robert Webb	Maryland
	Jablon, Paul Allan Milton	Maryland
***	Kalb, Richard Paul	Maryland
	Kantorski, Robert Richard	Maryland
	Kempler, Jerold Allan	Maryland
	Kleiner, Harold Stanley	Maryland
	Konrad, James Gerard	Maryland
	Levitt, Kelvin Ronald	Maryland
***	Losinsky, Barry Sheldon	Maryland
***	Loy, John Haywood, Jr.	Maryland
	Mackay, Walter Price	Maryland
	Mackowiak, Frank John	Maryland
	Maggitti, Ronald Francis	Maryland
***	Maleson, Howard Stanley	Maryland
	Martin, Wallace O'Connor	Maryland
	Mendelsohn, James F.	Maryland
	Miller, Stanley	Maryland
***	Moore, Myrna Lee	Maryland
	Newman, Jerome	Maryland
	Perzynski, Paul Ronald	Maryland
***	Pfann, George Alan	Maryland
	Pilson, Robert Michael, Jr.	Maryland
	Plummer, Robert Mitchell	Maryland
	Price Chester Lee	Maryland
	Pristoop, Allan Sanford	Maryland
	Rosen, Allen William	Maryland
	Rosenstein, Sol	Maryland
	Roth, Edward Barry	Maryland
	Sandler, Charles Allen	Maryland
	Serpick, David Yale	Maryland
	Sobczak, Valentine Raymond	Maryland
	Sober, Julian Neal	Maryland
	Sophocleus, Theodore John	Maryland
	Spak, Allen	Maryland
***	Stevenson, Gordon Albert	Maryland

**Second semester only.

***Did not attend entire session.

Sophomore Class (continued)

Sugarman, Henry	Maryland
***Thawley, Patricia	Maryland
Vykol, Frank James	Maryland
***Wagenheim, Arnold Robert	Maryland
Wagner, Herbert Charles	Maryland
***Weiner, George Wayne	Maryland
***Weiner, Susan Siegel	Maryland
Wolff, Donald W.	Maryland
Zimmer, Reid Austin	California

Freshman Class

Abel, Walter Howard	Maryland
Abramovitz, Marjorie Sue	Maryland
Antwarg, Alvin Gordon	Maryland
Aronson, Alan Joel	Maryland
***Asbell, Arlene Dee	Virginia
Attman, Ely	Maryland
Baker, Jeanne Ann	Maryland
Banks, David Edwin	Maryland
Bartlebaugh, John Irvin	Maryland
Batt, William Henry	Maryland
Benson, Michael Theodore	Maryland
Blake, David Andrew	Maryland
Blas, Sanford Ernest	Maryland
Brädenbaugh, Don Lloyd	Maryland
Brownstein, Marshall Paul	Maryland
Bryan, Joseph Carrow, IV	Maryland
Caplan, Yale Howard	Maryland
Caple, Arthur Morris, Jr.	Maryland
Chang, Gloria	Maryland
Cohen, Michael David	Maryland
Conrad, John Wilmer	Maryland
Courpas, Anthony Leo	Maryland
Crosby, Deborah Frances	District of Columbia
Dockins, James Joseph	Maryland
Dubinsky, Barry David	Maryland
Epstein, Arthur Leon	Maryland
Fader, John Frederick, II	Maryland
Flax, Irvin	Maryland
Foster, Barbara Ann	California
Friedel, Stuart Lee	Maryland
Gammerman, Marvin Irvin	Maryland
Garrett, James Harvey	District of Columbia
***Giudice, Angelo Raphael	Maryland
Goldberg, Marvin	Maryland

***Did not attend entire session.

Freshman Class (continued)

	Goldman, William Ivan	Maryland
***	Heffernan, Michael Fitzpatrick	Maryland
	Heyman, Irvin Alvin	Maryland
***	Holzknicht, Daniel Joseph	Maryland
	Hopkins, Ronald Murray	Maryland
	Jacobs, Martin Neal	Maryland
	Keller, Thomas Henry, Jr.	Maryland
***	Kenney, William Michaels	Maryland
	Levi, Henry Michael	Maryland
	Levin, Stephen Paul	Maryland
***	McCraw, Fredda Muriel	North Carolina
	McLaughlin, McDonald	Maryland
***	Moffett, Harry Wayne T.	Maryland
	Myers, John Edward	Maryland
	Neiner, Carol Mary	Maryland
	O'Donnell, Charles Edward	Maryland
	Pariser, Joseph	Maryland
	Peterson, Julia Foard	Maryland
***	Platt, Irvin	Maryland
	Popov, Metodi	Maryland
	Quick, Stephen Bradford	Virginia
	Rachanow, Gerald Marvin	Maryland
	Reinke, Budne Charles	Maryland
***	Resnick, Melvyn Jay	Maryland
	Ritchie, James Reed	Maryland
***	Rubin, Ned Earle	Maryland
	Sapperstein, Alan Edward	Maryland
	Scholtz, Frank William	Maryland
	Seechuk, William Walter	Maryland
	Shaner, Daniel Stephen	Maryland
	Shargel, Leon David	Maryland
	Shaver, Carole Frances	Maryland
***	Smerker, W. Kenneth	Maryland
	Sullivan, Francis Joseph, Jr.	Maryland
	Tristani, Ettore Mario	Maryland
	Ullman, Kenneth Charles	Maryland
	Warfield, Carolyn Jane	Maryland
	Welsh, James Joseph	Maryland
***	White, Richard Leroy	Maryland
	Wilson, John Wesley	Maryland
	Winakur, Stuart	Maryland
	Woods, Dennis Scott	Maryland
	Yee, Susan	Maryland

Special Student

***	Hardy, Jerry David, Jr.	Maryland
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***Did not attend entire session.

Pre-Pharmacy Students at College Park

**Belkowitz, Jay S.	Lemnah, David N.
**Carr, Velma A.	Moeller, John H.
**Cohen, Larry M.	**Sollod, Ralph M.
***Davis, Jr., Orville W.	**Tannebaum, Stanley B.
**Griver, Michael A.	**Wolfson, I. David
**Henderson, Robert L.	

ROLL OF GRADUATES, JUNE 6, 1959

Doctor of Philosophy

Samuel Elkin	Pennsylvania
Bernard Francis Grabowski	Pennsylvania
Myron Simon Weinberg	New York

Master of Science

Robert Edward Havranek	New York
Stephen Bird Kistler	New York
Judith Ann Laegeler	Illinois
Spyros A. Lazaris	Greece
Willard James Lennox	Maryland
Vithalbhaj Chhotabhaj Patel	India
Puar Suvanprakorn	Thailand

Bachelor of Science in Pharmacy

John Wilbert Becker	Maryland
Stanley Leonard Becker	Maryland
Charles Joseph Berger, Jr.	Maryland
Harry James Brown	Maryland
Vincent De Paul Burkhart	Maryland
Carl Michael Caplan	Maryland
Melvin Chaiet	Maryland
James Earl Crouse	Maryland
Martin Eugene Deming	Maryland
Paul Anthony Fleckenstein	Maryland
Joseph Stafford Freeman	Maryland
Paul Michael Friedlander	Maryland
Sheldon Allan Friedlander	Maryland
Paul Glenn Gaver, Jr.	Maryland
Stanley Lester Goldberg	Maryland
William B. Gray	Maryland
Murray Gerald Greenberg	Maryland
Allen Hanenbaum	Maryland

**Second semester only.

***Did not attend entire session.

Bachelor of Science in Pharmacy (continued)

Donald Charles King	Maryland
Earl Ephraim Klioze	Maryland
Patricia Phyllis Kostos	Maryland
Ellis Levi	Maryland
Barry Elliott Levin	Maryland
Nina Debra Levinsohn	Maryland
William Irving Lottier, Jr.	Maryland
Harry Elliott Macks	Maryland
Antoinette Rosalie Malanowski	Maryland
Eugenie Wallace Marshall	Maryland
Arnold Jay Neuburger	Maryland
Thomas Milton Gosnell Penn	Maryland
Larry H. Pozanek	Maryland
William W. Resser	Maryland
David Ronald Richardson	Maryland
William Charles Richmond	Maryland
Herbert Allen Leonard Sachs	Maryland
Marvin Frederick Saiontz	Maryland
John D. H. Santoni	Maryland
Sorell Lee Schwartz	Maryland
Alfred Howard Schwartzman	Maryland
Anthony John Sniadowski	Maryland
Murray Charles Spear	Maryland
John Rushton Thomas	Maryland
Charles Henry Tregoe	Maryland

Honors (1958-59)

Gold Medal for General Excellence	Murray C. Spear
William Simon Memorial Prize	Murray C. Spear
Andrew G. DuMez Medal	Larry H. Pozanek
L. S. Williams Practical Pharmacy Prize	Marvin F. Saiontz
Conrad L. Wich Pharmacognosy Prize	Sheldon A. Friedlander
David Fink Memorial Prize	Murray C. Spear
Phi Beta Chapter, Phi Sigma Delta Fraternity Cup	Alfred H. Schwartzman
Kappa Chapter, Alpha Zeta Omega Prize	Alfred H. Schwartzman
Epsilon Alumnae Chapter, Lambda Kappa Sigma Sorority Prize	William B. Gray

Certificates of Honor

Marvin Frederick Saiontz

Melvin Chaiet

Larry Herbert Pozanek

Honorable Mention (Junior Class)

Martin Chaim Shargel

Peter Paul Scali

Morton David Richman

DEAN'S MEDALS FOR ACADEMIC EXCELLENCE

(1958-59)

Class of 1959

John Becker
Carl Caplan
Melvin Chalet
Paul Friedlander
Sheldon Friedlander
William Gray
Earl Klioze
Barry Levin

Harry Macks
Eugenie Marshall
Larry Pozanek
Herbert Sachs
Marvin Saiontz
Sorell Schwartz
Alfred Schwartzman
Murray Spear

Honorable Mention

Stanley Becker

Murray Greenberg

Class of 1960

Louis Friedman
Henry Glick
Ronald Goldner
Joseph Handelman
Irvin Levin

Irving Raksin
David Richman
Martin Shargel
John Warthen, Jr.

Honorable Mention

John Jordan
Peter Scali

Bernard Sherr
Albert Warfield

Class of 1961

June Eng
Harvey Reisenweber

Vito Tinelli
Douglas Walkling

Honorable Mention

Arnold Amass

William Tabak

Irvin Yospa

Class of 1962

Louis Gubinsky
Sydney Hamet
Paul Jablon

Robert Kantorski
Allen Pristoop
Edward Roth

Honorable Mention

Henry Austraw

Jerold Kempler

Richard Clinger

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7
—The University is the rear guard and the advance agent of society. It lives in the past, the present and the future. It is the storehouse of knowledge; it draws upon this depository to throw light upon the present; it prepares people to live and make a living in the world of today; and it should take the lead in expanding the intellectual horizons and the scientific frontiers, thus helping mankind to go forward —always toward the promise of a better tomorrow.

— From "The State and the University,"
the inaugural address of
President Wilson H. Elkins,
January 20, 1955,
College Park, Maryland.



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Catalog of

School of Pharmacy

1961-1962

UNIVERSITY OF MARYLAND
BULLETIN

The provisions of this publication are not to be regarded as an irrevocable contract between the student and the University of Maryland. The University reserves the right to change any provision or requirement at any time within the student's term of residence. The University further reserves the right at any time, to ask a student to withdraw when it considers such action to be in the best interests of the University.

Catalog and

118th Announcement

The School of Pharmacy

(Maryland College of Pharmacy, 1841 to 1904)

1961-1962



VOLUME 41, NUMBER 1
School of Pharmacy
636 West Lombard Street
Baltimore 1, Maryland

This catalog includes information applying to the terminal two years of the Four Year Program in Baltimore as well as the new Five Year Program which was mandatory in September 1960.

1961

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1962

JANUARY 1961

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NOVEMBER

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DECEMBER

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ACADEMIC CALENDAR

1961-1962

First Semester

1961

September	18	Monday		Junior (Four Year Program) Registration— 9:00-10:00 a.m. Senior (Four Year Program) Registration— 10:30-11:30 a.m. First Year (Professional Program) Registration 1:00-2:00 p.m.
September	19	Tuesday	.....	Graduate Registration—9:00-11:30 a.m.
September	25	Monday	.....	Instruction begins with first scheduled period
November	22	Wednesday	.....	Thanksgiving recess begins at close of last scheduled period
November	27	Monday	.....	Instruction resumes with first scheduled period
December	20	Wednesday	.....	Christmas recess begins at close of last scheduled period

1962

January	3	Wednesday	.....	Instruction resumes with first scheduled period
January	24-30	Wed.-Tues.	.....	First semester examinations

Second Semester

February	6	Tuesday	.....	Junior (Four Year Program) Registration— 9:00-10:00 a.m. Senior (Four Year Program) Registration— 10:30-11:30 a.m. First Year (Professional Program) Registration —1:00-2:00 p.m.
February	7	Wednesday	.....	Graduate Registration—9:00-11:00 a.m.
February	12	Monday	.....	Instruction begins with first scheduled period
February	22	Thursday	.....	Washington's Birthday, Holiday
April	19	Thursday	.....	Easter recess begins at close of last scheduled period
April	24	Tuesday	.....	Instruction resumes with first scheduled period
May	21-25	Mon.-Fri.	.....	Senior final examinations
May	25-31	Fri.-Thurs.	.....	Second semester examinations
May	30	Wednesday	.....	Memorial Day, Holiday
June	9	Saturday	.....	Commencement

All students are expected to complete their registration, including the payment of bills and filing of class cards, on the regular registration day. Students failing to comply with this regulation are charged a fee of five dollars. No student is normally permitted to register after Saturday noon of the week in which instruction begins.

The offices of the Registrar and Cashier are open daily, Monday through Friday, from 9:00 a.m. to 4:00 p.m.

CORRESPONDENCE

All correspondence prior to entrance to the upper two years of the Four Year Program in the School of Pharmacy should be addressed to the Director of Admissions, University of Maryland, Building 520R, Lombard and Greene Streets, Baltimore 1, Md.

All correspondence prior to entrance in the Pre-professional Program of the Five Year Program should be addressed to the Director of Admissions, University of Maryland, College Park, Md.

All correspondence relative to entrance in the Professional Program of the Five Year Program should be addressed to the Director of Admissions, University of Maryland, Building 520R, Lombard and Greene Streets, Baltimore 1, Maryland.

Correspondence relating to the following topics should be addressed to the respective departments in care of the School of Pharmacy, 636 West Lombard Street, Baltimore 1, Maryland:

Alumni Affairs, Business Matters, Catalogs and Brochures,
General Matters, Gifts and Bequests, Public Relations,
Housing of Students (Baltimore), Scholarships (Baltimore),
Scholastic Standing of Students (Baltimore), Transcripts of
Records (Baltimore), Vocational Placement.

VISITORS

Visitors are welcome at the School of Pharmacy in Baltimore. The Dean's Office is open Monday through Friday from 9 a.m. to 5 p.m. and on Saturday by appointment.

BOARD OF REGENTS

and

MARYLAND STATE BOARD OF AGRICULTURE

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LOUIS L. KAPLAN <i>Assistant Secretary</i> 5800 Park Heights Avenue, Baltimore 15	1964
C. EWING TUTTLE <i>Assistant Treasurer</i> 907 Latrobe Building, Charles and Read Streets, Baltimore 2	1962
RICHARD W. CASE Commercial Credit Building, 300 St. Paul Place, Baltimore 2	1970
THOMAS W. PANGBORN The Pangborn Corporation, Pangborn Blvd., Hagerstown	1965
THOMAS B. SYMONS Suburban Trust Company, 6950 Carroll Avenue, Takoma Park	1963
WILLIAM C. WALSH Liberty Trust Building, Cumberland	1968
MRS. JOHN L. WHITEHURST 4101 Greenway, Baltimore 18	1967

Members of the Board are appointed by the Governor of the State for terms of seven years each, beginning the first Monday in June. Members may serve only two consecutive terms.

The President of the University of Maryland is, by law, executive Officer of the Board.

The State law provides that the Board of Regents of the University of Maryland shall constitute the Maryland State Board of Agriculture.

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B.A., University of Texas, 1932; M.A., 1932; B.LITT., Oxford University, 1936;
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B.S., University of Maryland, 1938; M.S., 1939; PH.D., 1948.

R. LEE HORNBAKE, *Vice President for Academic Affairs*

B.S., California State College, California, Pa., 1934; M.A., Ohio State University,
1936; PH.D., 1942.

ALVIN E. CORMENY, *Assistant to the President, in Charge of Endowment and Development*

B.A., Illinois College, 1933; LL.B., Cornell University, 1936.

FRANK L. BENTZ, JR., *Assistant, President's Office*

B.S., University of Maryland, 1942; PH.D., 1952.

Emeriti

HARRY C. BYRD, *President Emeritus*

B.S., University of Maryland, 1908; LL.D., Washington College, 1936; LL.D., Dickinson College, 1938; D.SC., Western Maryland College, 1938.

ADELE H. STAMP, *Dean of Women Emerita*

B.A., Tulane University, 1921; M.A., University of Maryland, 1924.

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D.D.S., University of Maryland, 1922.

VERNON E. ANDERSON, *Dean of the College of Education*

B.S., University of Minnesota, 1930; M.A., 1936; PH.D., University of Colorado, 1942.

RONALD BAMFORD, *Dean of the Graduate School*

B.S., University of Connecticut, 1924; M.S., University of Vermont, 1926; PH.D., Columbia University, 1931.

GORDON M. CAIRNS, *Dean of Agriculture*

B.S., Cornell University, 1936; M.S., 1938; PH.D., 1940.

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B.A., Wabash College, 1929; M.A., Butler University, 1930; PH.D., Syracuse University, 1937.

NOEL E. FOSS, *Dean of the School of Pharmacy*

PH.C., South Dakota State College, 1929; B.S., 1929; M.S., University of Maryland, 1932; PH.D., 1933.

LESTER M. FRALEY, *Dean of the College of Physical Education, Recreation and Health*

B.A., Randolph-Macon College, 1928; M.A., 1937; PH.D., Peabody College, 1939.

FLORENCE M. GIPE, *Dean of the School of Nursing*

B.S., Catholic University of America, 1937; M.S., University of Pennsylvania, 1940; ED.D., University of Maryland, 1952.

LADISLAUS F. GRAPSKI, *Director of the University Hospital*

R.N., Mills School of Nursing, Bellevue Hospital, New York, 1938; B.S., University of Denver, 1942; M.B.A., in Hospital Administration, University of Chicago, 1943.

IRVIN C. HAUT, *Director, Agriculture Experiment Station and Head, Department of Horticulture*

B.S., University of Idaho, 1928; M.S., State College of Washington, 1930; PH.D., University of Maryland, 1933.

ROGER HOWELL, *Dean of the School of Law*

B.A., Johns Hopkins University, 1914; PH.D., 1917; LL.B., University of Maryland, 1917.

VERL S. LEWIS, *Dean of the School of Social Work*

A.B., Huron College, 1933; M.A., University of Chicago, 1939; D.S.W., Western Reserve University, 1954.

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B.S., Arkansas State Teachers College, 1938; M.S., University of Tennessee, 1945; PH.D., Pennsylvania State University, 1953.

FREDERIC T. MAVIS, *Dean of the College of Engineering*

B.S., University of Illinois, 1922; M.S., 1926; C.E., 1932; PH.D., 1935.

PAUL E. NYSTROM, *Director, Agricultural Extension Service*

B.S., University of California, 1928; M.S., University of Maryland, 1931; M.P.A., Harvard University, 1948; D.P.A., 1951.

J. FREEMAN PYLE, *Dean of the College of Business and Public Administration*

PH.B., University of Chicago, 1917; M.A., 1918; PH.D., 1925.

LEON P. SMITH, *Dean of the College of Arts and Sciences*

B.A., Emory University, 1919; M.A., University of Chicago, 1928; PH.D., 1930; Diplome de l'Institut de Touraine, 1932.

WILLIAM S. STONE, *Dean of the School of Medicine and Director of Medical Education and Research*

B.S., University of Idaho, 1924; M.S., 1925; M.D., University of Louisville, 1929; PH.D., (HON.), University of Louisville, 1946.

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G. WATSON ALGIRE, *Director of Admissions and Registrations*

B.A., University of Maryland, 1930; M.S., 1931.

University of Maryland

THEODORE R. AYLESWORTH, *Professor of Air Science and Head, Department of Air Science*

B.S., Mansfield State Teachers College, 1936; M.S., University of Pennsylvania, 1949.

B. JAMES BORRESON, *Executive Dean for Student Life*

B.A., University of Minnesota, 1944.

DAVID L. BRIGHAM, *Director of Alumni Relations*

B.A., University of Maryland, 1938.

C. WILBUR CISSEL, *Director of Finance and Business*

B.A., University of Maryland, 1932; M.A., 1934; C.P.A., 1939.

HELEN E. CLARKE, *Dean of Women*

B.S., University of Michigan, 1943; M.A., University of Illinois, 1951; ED.D., Teachers College, Columbia University, 1960.

WILLIAM W. COBEY, *Director of Athletics*

A.B., University of Maryland, 1930.

LESTER M. DYKE, *Director of Student Health Service*

B.S., University of Iowa, 1936; M.D., 1926.

GEARY F. EPPLEY, *Dean of Men*

B.S., Maryland State College, 1920; M.S., University of Maryland, 1926.

HARRY D. FISHER, *Comptroller and Budget Officer*

B.S., University of Maryland, 1943.

GEORGE W. FOGG, *Director of Personnel*

B.A., University of Maryland, 1926; M.A., 1928.

ROBERT J. MC CARTNEY, *Director of University Relations*

B.A., University of Massachusetts, 1941.

GEORGE W. MORRISON, *Associate Director and Supervising Engineer Physical Plant (Baltimore)*

B.S., University of Maryland, 1927; E.E., 1931.

HOWARD ROVELSTAD, *Director of Libraries*

B.A., University of Illinois, 1936; M.A., 1937; B.S.L.S., Columbia University, 1940.

ORVAL L. ULRY, *Director of Summer Session*

B.S., Ohio State University, 1938; M.A., 1944; PH.D., 1953.

GEORGE O. WEBER, *Director and Supervising Engineer, Department of Physical Plant*

B.S., University of Maryland, 1933.

Division Chairmen

JOHN E. FABER, JR., *Chairman of the Division of Biological Sciences*

B.S., University of Maryland, 1926; M.S., 1927; PH.D., 1937.

HAROLD C. HOFFSOMMER, *Chairman of the Division of Social Sciences*

B.S., Northwestern University, 1921; M.A., 1923; PH.D., Cornell University, 1929.

CHARLES E. WHITE, *Chairman of the Lower Division*

B.S., University of Maryland, 1923; M.S., 1924; PH.D., 1926.

ADOLF E. ZUCKER, *Chairman of the Division of Humanities*

B.A., University of Illinois, 1912; M.A., 1913; PH.D., University of Pennsylvania, 1917.

CHAIRMEN, STANDING COMMITTEES, FACULTY SENATE

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Dr. Vernon E. Krah1 (Medicine), *Chairman*

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GAYLORD B. ESTABROOK

FRANK J. SLAMA

FRANCIS M. MILLER

CASIMIR T. ICHNIOWSKI, *Secretary*

Faculty (1960-1961)

Emerita

B. OLIVE COLE, *Professor Emerita of Pharmacy Administration*
PHAR.D., University of Maryland, 1913; LL.B., 1923.

Professors

*GAYLORD B. ESTABROOK, *Professor of Physics*

B.S. IN CH.E., Purdue University, 1921; M.S., Ohio State University, 1922; PH.D., University of Pittsburgh, 1932.

NOEL E. FOSS, *Professor of Pharmacy*

PH.C., South Dakota State College, 1929; B.S. IN PHARM., 1929; M.S., University of Maryland, 1932; PH.D., 1933.

Registered Pharmacist—South Dakota, New York, Maryland.

CASIMIR T. ICHNIOWSKI, *Emerson Professor of Pharmacology*

PH.G., University of Maryland, 1929; B.S. IN PHARM., 1930; M.S., 1932; PH.D., 1936.

Registered Pharmacist—Maryland.

†W. ARTHUR PURDUM, *Professor of Hospital Pharmacy*

PH.G., University of Maryland, 1930; B.S. IN PHARM., 1932; M.S., 1934; PH.D., 1941.

Registered Pharmacist—Maryland.

DONALD E. SHAY, *Professor of Microbiology*

B.S., Lebanon Valley College, 1937; M.S., University of Maryland, 1938; PH.D., 1943.

FRANK J. SLAMA, *Professor of Pharmacognosy*

PH.G., University of Maryland, 1924; PH.C., 1925; B.S. IN PHARM., 1928; M.S., 1930; PH.D., 1935.

Registered Pharmacist—Maryland.

Associate Professors

BENJAMIN FRANK ALLEN, *Associate Professor of Pharmacy*

B.S. IN PHARM., University of Maryland, 1937; PH.D., 1949.

Registered Pharmacist—Maryland.

LESLIE C. COSTELLO, *Associate Professor of Anatomy and Physiology*

B.S., University of Maryland, 1952; M.S., 1954; PH.D., 1957.

NORMAN J. DOORENBOS, *Associate Professor of Pharmaceutical Chemistry*

B.S. IN CHEM., University of Michigan, 1950; M.S., 1951; PH.D., 1953.

*Teacher detailed from the College of Arts and Sciences to the Baltimore Branch of the University.

†Part time.

FRANCIS M. MILLER, *Associate Professor of Chemistry*

B.S., Western Kentucky State College, 1946; PH.D., Northwestern University, 1949.

IDA MARIAN ROBINSON, *Associate Professor of Library Science*

A.B., Cornell University, 1924; B.S.L.S., Columbia University School of Library Science, 1944.

Assistant Professors

†*ADELE B. BALLMAN, *Assistant Professor of English*

A.B., Goucher College, 1926; PH.D., The Johns Hopkins University, 1935.

HILDA E. MOORE, *Assistant Professor of Library Science*

A.B., Randolph-Macon Woman's College, 1936; A.B.L.S., Emory University Library School, 1937.

RALPH F. SHANGRAW, *Assistant Professor of Pharmacy*

B.S. IN PHARM., Massachusetts College of Pharmacy, 1952; M.S., 1954; PH.D., University of Michigan, 1959.

Registered Pharmacist—Vermont, Massachusetts.

NICOLAS ZENKER, *Assistant Professor of Chemistry*

CD. SC. CH., University of Louvain (Belgium), 1948; M.A., University of California, 1953; PH.D., 1958.

Instructors

EARL F. BECKER, JR., *Instructor in Microbiology*

B.S., Muhlenberg College, 1951; M.S., George Washington University, 1957.

GEORGIANNA S. GITTINGER, *Instructor in Pharmacology*

A.B., Hood College, 1912; M.A., University of Virginia, 1924.

ROBERT J. KOKOSKI, *Instructor in Pharmacognosy*

B.S. IN PHARM., University of Maryland, 1952; M.S., 1956.

Registered Pharmacist—Maryland.

DEAN E. LEAVITT, *Instructor in Pharmacy Administration*

B.S. IN PHARM., University of Maryland, 1954; M.S., 1957.

Registered Pharmacist—Maryland.

PHILLIP J. LEVINE, *Instructor in Pharmacy*

B.S., Rhode Island College of Pharmacy, 1955; M.S., University of Maryland, 1957.

Registered Pharmacist—Maryland, Rhode Island.

Lecturers

JOSEPH S. KAUFMAN, *Lecturer in Pharmacy Administration*

B.A., University of Maryland, 1950; LL.B., University of Maryland, 1953.

*PAUL P. MILLER, *Lecturer in Mathematics*

B.S., The Johns Hopkins University, 1944; M.A., 1948.

†Part time.

*Teacher detailed from the College of Arts and Sciences to the Baltimore Branch of the University.

University of Maryland

Visiting Lecturers

SAMUEL L. FOX, *Visiting Lecturer in Physiology*

PH.G., University of Maryland, 1934; B.S. IN PHARM., 1936; M.D., 1938.

ENNIS C. LAYNE, JR., *Visiting Lecturer in Physiology*

B.S., George Washington University, 1950; M.S., 1953; PH.D., 1955.

Fellows

WOLFGANG BUHLER, *U. S. Public Health Service Fellow in Chemistry*

DIPLOM-CHEM., University of Heidelberg, Germany, 1957; DR. RER. NAT., 1960.

LANDON W. BURBAGE, *Bristol-Myers Fellow in Pharmacy Administration (Research)*

PH.B., Medical College of Virginia, 1909; PH.G., 1910.

CONRAD P. DORN, JR., *National Science Foundation Cooperative Fellow*

B.S. IN PHARM., University of Maryland, 1958.

IRVING M. FRIED, *National Science Foundation Cooperative Fellow*

B.S. IN PHARM., Temple University, 1958; M.S., 1960.

Registered Pharmacist—Pennsylvania

**ROBERT E. HAVRANEK, *The H. A. B. Dunning Research Fellow in Chemistry*

B.S. IN PHARM., Columbia University, 1956; M.S., University of Maryland, 1959.

Registered Pharmacist—California, Maryland, New York, Florida.

HATIF H. JALIL, *U. S. Public Health Service Fellow in Chemistry*

PH. CH., Royal College of Pharmacy and Chemistry, Iraq, 1952; M.S., University of Maryland, 1955; PH.D., 1957.

***MARION I. MANION, *Research Assistant in Chemistry*

B.S. PHARMACY, Centro Escolar University, Manila, P. I., 1953.

MASAKO NAKAGAWA, *U. S. Public Health Service Fellow in Chemistry*

B.S., Hokkaido University, Japan, 1958; M.S., 1960.

VITHALBBAI C. PATEL, *U. S. Public Health Service Fellow in Chemistry*

B. PHARM., L. M. College of Pharmacy, Gujarat University, India, 1956; M.S., University of Maryland, 1959.

EUGENE G. REIER, *Noxzema Foundation Fellow in Pharmacy*

B.S. IN PHARM., University of Maryland, 1958.

Registered Pharmacist—Maryland.

ARVIND P. SHROFF, *Sterling-Winthrop Fellow in Chemistry*

B.SC., M. S. University, Baroda, India, 1954; M.S., Duquesne University, 1958.

HARKISHAN SINGH, *U. S. Public Health Service Fellow in Chemistry*

B. PHARM., Punjab University, 1950; M. PHARM., Banaras Hindu University, 1952; PH.D., 1956.

**Resigned December 31, 1960 to accept U.S. Public Health Service Fellowship.

***Effective February 20, 1961.

****C. RICHARD TAMORRIA**, *U. S. Public Health Service Fellow in Chemistry*
B.S., Georgetown College, 1954; M.S., 1957.

THEODORE H. T. WANG, *U. S. Public Health Service Fellow in Chemistry*
B.S., Mukden Medical College, China, 1949; M.S., University of Nebraska, 1958.

JOHN D. WARTHEN, JR., *American Foundation for Pharmaceutical Education Fellow.*

B.S. IN PHARM., University of Maryland, 1960.
Registered Pharmacist—Maryland.

MU-TSU WU, *Research Chemist*
B.S.C. IN CHEMISTRY, 1951, National Taiwan University.

Junior Instructor

NAGINDAS K. PATEL, *Junior Instructor in Pharmacy*
I.S.C., Bharatiya Vidya Bhavan's College, 1952; B. PHARM., L.M. College of Pharmacy, India, 1954; M.S., Temple University, 1957.
Registered Pharmacist—India.

Graduate Assistants

*****JOHN W. BECKER**, *Assistant in Pharmacy*
B.S. IN PHARM., University of Maryland, 1959.
Registered Pharmacist—Maryland.

STANLEY L. BECKER, *Assistant in Pharmacy*
B.S. IN PHARM., University of Maryland, 1959.
Registered Pharmacist—Maryland.

***HARRY J. BROWN**, *Assistant in Physiology*
B.S. IN PHARM., University of Maryland, 1959.
Registered Pharmacist—Maryland.

******WILLIAM J. FINN**, *Assistant in Pharmacology*
B.S. IN PHARM., Albany College of Pharmacy, 1959.
Registered Pharmacist—Vermont, Maryland.

CARL L. HEIFETZ, *Assistant in Pharmacology*
B.S. IN PHARM., University of Maryland, 1957; M.S., 1960.
Registered Pharmacist—Maryland, District of Columbia.

***CHARLES F. HOOPER, JR.**, *Assistant in Physics*
B.A., Dartmouth College, 1954.

BARBARA H. KONOPIK, *Assistant in Chemistry*
A.B., Mt. St. Agnes College, 1957.

*Teacher detailed from the College of Arts and Sciences to the Baltimore Branch of the University.

**Resigned December 31, 1960.

***Resigned January 28, 1961.

****Resigned February 4, 1961.

University of Maryland

MARCELA S. LO, *Assistant in Chemistry*

B.S. IN PHARM., Centro Escolar University, Philippines, 1955; M.S., 1958.

EDWARD MARLOWE, *Assistant in Pharmacy Administration*

B.S. IN PHARM., Columbia University, 1956; M.S., 1958.

Registered Pharmacist—New York, Maryland.

**M. DAVID RICHMAN, *Assistant in Pharmacy*

B.S. IN PHARM., University of Maryland, 1960.

Registered Pharmacist—Maryland

ALBERT H. WARFIELD, *Assistant in Chemistry*

B.S. IN PHARM., University of Maryland, 1960.

Registered Pharmacist—Maryland.

Assistant

JAMES P. CRAGG, JR., *Assistant in Practical Pharmacy*

B.S. IN PHARM., University of Maryland, 1943.

Registered Pharmacist—Maryland

Library Staff

Health Sciences Library

IDA MARIAN ROBINSON, *Librarian*

A.B., B.S.L.S.

HILDA E. MOORE, *Associate Librarian*

A.B., A.B.L.S.

SARAH L. ATKINS, *Cataloging Assistant*

MARIE M. CHAFFMAN, *Assistant Circulation Librarian*

JACQUELINE B. CLEM, *Secretary to the Librarian*

EDITH M. COYLE, *Head, Serials Department*

A.B., A.B.L.S., M.A.

RUTH. E. HANNA, *Assistant Acquisitions Librarian*

A.B., M.S.L.S.

SIMONE C. HURST, *Head, Circulation Department*

FLORENCE R. KIRK, *Reference Librarian*

BETTY B. LINKOUS, *Cataloging Assistant*

HANS-GUENTHER R. LISTFELDT, *Assistant Serials Librarian*

BEATRICE MARRIOTT, *Reference Librarian*

A.B.

**Effective January 30, 1961.

ELEANOR M. MITTEN, *Head, Catalog Department*
B.S., B.S.L.S.

ELWOOD STERLING, *Library Clerk*

MARJORIE F. VILK, *Cataloger*
B.S. IN ED.

Assisting Staff

DAISY LOTZ GUE, *Secretary-Stenographer*

MARGARET E. BEATTY, *Senior Stenographer*

*JOAN P. KAVLICK, *Senior Stenographer*

FRANCES R. PLITT, *Senior Stenographer*

*Effective September 12, 1960 to April 15, 1961.



THE SCHOOL OF PHARMACY

History and Program

THE PURPOSES OF THE SCHOOL OF PHARMACY are to train students for the efficient, ethical practice of all branches of pharmacy; to instruct students in general scientific and cultural subjects so that they can read critically, express themselves clearly, and think logically as members of a profession and citizens of a democracy; to guide students into productive scholarship and research for the increase of knowledge and techniques in the healing arts of pharmacy.

The Maryland College of Pharmacy, the oldest pharmacy school of the South, was organized on July 20, 1840 by a progressive group of Maryland physicians and apothecaries to provide systematic instruction in Pharmacy to replace the out-dated apprenticeship training. The College, incorporated on January 27, 1841, gave its first lectures in November. In 1904, the College joined with a group of medical schools and the Maryland College of Dental Surgery to offer cooperative instruction in the health sciences. The new institution was known as the University of Maryland. In 1920, this group of Baltimore professional schools was merged with the Maryland State College at College Park to form the present University of Maryland.

The School now occupies buildings constructed specifically for pharmaceutical education. The laboratories and classrooms are equipped with the most modern apparatus and every aid to instruction in the liberal arts and for research in pharmacy is available.

The library facilities are excellent. The pharmacy collection containing over 27,000 books is housed in the new Health Sciences Library.

Students have access to the time-honored collections of the Enoch Pratt, the Peabody, the Medical and Chirurgical Faculty, and The Johns Hopkins University. These libraries are within convenient distance of the School.

Students also have access to the art collections at the Walters Art Gallery and the Baltimore Museum of Art.

Like all professions devoted to education in the health sciences, pharmacy has expanded its period of training. The American Association of Colleges of Pharmacy requires a Five Year Program and students entering the study of pharmacy on or after the Autumn of 1960 are required to enroll in a Five Year Pharmacy Program.

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education. The School holds membership in the American Association of Colleges of Pharmacy.

Degrees

The School of Pharmacy offers courses leading to the following degrees: Bachelor of Science in Pharmacy, Master of Science, Doctor of Philosophy. The general procedures to be followed by undergraduate students are set forth below.

Candidates for advanced degrees must register in the Graduate School of the University. For detailed information, see the catalog of the Graduate School.

Programs Offered During The 1961-1962 Academic Year

The Junior and Senior Years of the four year educational program will be offered by the School of Pharmacy at Baltimore in September 1961. Only qualified students will still be considered for admission to these last two years of the four year program.

As a result of a decision by the American Council on Pharmaceutical Education, students beginning a pharmacy or pre-pharmacy curriculum on or after April 1, 1960 are required to enroll in the academic program of not less than five years. At the University of Maryland the five year program consists of two years of a pre-professional program and a three year pharmacy program. Only the three year pharmacy program is offered in Baltimore. The pre-professional program is not available in Baltimore but may be obtained at the College Park campus of the University or any other accredited university or college where appropriate courses are offered.*

The first year of the professional program will be offered in Baltimore in September 1961.

Admission to Advanced Standing in the Four Year Program

Only students who have completed all the requirements for the Freshman and Sophomore Years or more of the current four year program will be considered as transfer students to be admitted in September 1961.

In addition, an applicant for admission to advanced standing must fulfill the requirements for admission to the freshman class and present official transcripts of his college record along with a certificate of good standing from the college he attended. His grade average must be at least C or the equivalent in the college's grading system. Transfer credit is given only for those courses completed with a grade of C or higher and which are part of the four year curriculum.

Transfers from colleges of pharmacy accredited by the American Council on Pharmaceutical Education may be given credit for the work up through the first three years of the pharmacy curriculum which they have completed.

Transfers from liberal arts colleges are given credit for the liberal arts subjects of the pharmacy curriculum. Not more than a year's credit is given for work completed at a liberal arts college.

All students admitted to advanced standing are required to take those courses in the School's curriculum which they have not completed. In the schedules for transfer students, elementary subjects not completed are given preference over advanced work.

*Courses approved by the University of Maryland in non-accredited junior colleges within the State of Maryland may be accepted for credit requirements by the University. The year (not less than 24 hours of academic work) immediately prior to admission must be successfully completed in a regionally accredited college or university.

Credit is not given for pharmaceutical work done in evening or correspondence schools, nor is credit given by examination for work done at other institutions if the school did not grant credit.

In determining the academic progress and standing of students who have transferred from other institutions only those courses taken at the School of Pharmacy of the University of Maryland are applied.

Requests for application blanks and information should be directed to the Dean of the School of Pharmacy or to the Director of Admissions of the University in Baltimore.

Requirements for Admission to the Five Year Program

ADMISSION TO PRE-PROFESSIONAL PROGRAM AT COLLEGE PARK

The graduates of accredited secondary schools will be admitted by certificates upon the recommendation of the secondary school principal.

Interested secondary school students are invited to write to the Dean of the School of Pharmacy in Baltimore for a catalog concerning the School and for literature about the opportunities in the pharmacy profession.

A complete statement of admission requirements and policies will be found in the publication entitled "An Adventure in Learning." A copy of this publication may be obtained by writing to the Office of University Relations, North Administration Building, University of Maryland, College Park, Maryland.

Application forms may be obtained only from the Director of Admissions of the University of Maryland at College Park. The requirements for admission to the School of Pharmacy at College Park are, in general, the same as those for admission to the other colleges and schools of the University. Applications must be made to the Director of Admissions, at College Park, Maryland.

A fee of \$10.00 must accompany a prospective student's application for admission. If a student enrolls for the term for which he applied, the fee is accepted in lieu of the matriculation fee.

The following academic subjects are recommended and required for admission to the Pre-Pharmacy program at College Park:

<i>Subjects</i>	<i>Recommended</i>	<i>Required</i>
	4 Units	4 Units
English		
College Preparatory Mathematics—including algebra (1), plane geometry (1) and additional units in advanced algebra, solid geometry, trigonometry, or advanced mathematics	4	2
Physical Sciences (Chemistry and Physics)	2	1
History and Social Sciences	2	1
Biological Sciences	1	0
Foreign Language—German or French	2	0
Unspecified academic subjects	1	8
Total	16	16

Annual costs of attending the University at College Park for Maryland residents include: fixed charges, \$185.00; instructional materials \$24.00; special fees \$77.00 to \$82.00, board, \$400.00 and lodging, \$210.00 to \$240.00. Non-resident students are assessed an additional fee of \$300.00 and lodging costs are \$260.00 to \$290.00.

The pre-professional program offered at College Park is as follows:

COLLEGE PARK DIVISION

First Year	Semester	
	I	II
Chemistry 1, 3—General Chemistry	4	4
*English 1, 2—Composition and American Literature	3	3
Math. 10, 11—Algebra, Trigonometry and Analytical Geometry	3	3
or		or
Math. 18, 19—Elementary Mathematical Analysis	5	5
Zoology 1—General Zoology	4	
Botany 1—General Botany		4
Physical Activities	1	1
Air Science 1, 2—Basic Air Force R.O.T.C. (Men)	2	2
Health 2, 4—Health (Women)	2	2
Total	17-19	17-19
Second Year		
*English 3, 4 or 5, 6—Composition and World or English Literature	3	3
*History 5, 6—History of American Civilization	3	3
Physics 10, 11—Fundamentals of Physics	4	4
Chemistry 19—Elements of Quantitative Analysis		4
Economics 37—Fundamentals of Economics	3	
*Government and Politics I or Group I Elective	3	
Elective:		
Approved Elective from Group I or Group II of American Civilization Program		3
Air Science 3, 4—Basic Air Force R.O.T.C. (Men)	2	2
Physical Activities	1	1
Total	17-19	18-20

*The Program in American Civilization.

THE PROGRAM IN AMERICAN CIVILIZATION

The University considers that it is important for every student to achieve an appreciative understanding of this country, its history and its culture. It has therefore established a comprehensive program in American Civilization. This program is also designed to provide the student with a general educational background.

Work in American Civilization is offered at three distinct academic levels. The first level is required of all freshmen and sophomores at the University and is described below. The second level is for undergraduate students wishing to carry a major in this field (see catalog for the College of Arts and Sciences). The third level is for students desiring to do graduate work in this field (see catalog for the Graduate School).

All students receiving a baccalaureate degree from the University of Maryland must (except as specific exceptions are noted in printed curricula) obtain 24 semester hours of credit in the lower division courses of the American Civilization Program. Although the courses in the Program are prescribed generally, some choice is permitted, especially for students who demonstrate in classification tests good previous preparation in one or more of the required subjects.

The 24 semester hours in American Civilization are as follows:

1. English (12 hours, Eng. 1, 2 and 3, 4 or 5, 6), American History (6 hours, H. 5, 6), and American Government (3 hours, G. & P. 1) are required subjects; however, students who qualify in one, two or all three of these areas by means of University administered tests are expected to substitute certain elective courses. Through such testing a student may be released from 3 hours of English (9 hours remaining as an absolute requirement), 3 hours of American History (3 hours remaining as an absolute requirement), and 3 hours of American Government. Students released from 3 hours of English will take Eng. 21 instead of Eng. 1 and 2. Those released from 3 hours of History will take, instead of H. 5 and 6, any one of the following three hour courses: H. 41, H. 42, H. 51, H. 52, H. 61, H. 62, H. 71, or H. 72. Students who have been exempted from courses in English, American History, or American Government may not take such courses for credit.

2. For the 3 additional hours of the 24 hours required, students elect one course from the following group (Elective Group I):

Economics 37, Fundamentals of Economics. (Not open to Freshmen.

Students who may wish to take additional courses in economics should substitute Economics 31 for Economics 37).

Philosophy 1, Philosophy of Modern Man

Sociology 1, Sociology of American Life

Psychology 1, Introduction to Psychology

(Students enrolled in the College of Business and Public Administration will normally meet this requirement by taking Economics 31 in the sophomore year.)

3. Students who, on the basis of tests, have been released from 3, 6 or 9 hours of otherwise required courses in English, American History or American

Government (see 1 above), shall select the replacements for these courses from any or all of the following groups: (a) more advanced courses in the same department as the required courses in which the student is excused, or (b) Elective Group I (see 2 above), provided that the same course may not be used as both a Group I and a Group II choice, or (c) Elective Group II. Group II consists of the following 3-hours courses:

H. 42, Western Civilization; either H. 51 or 52, The Humanities; either Music 20, Survey of Music Literature or Art 22, History of American Art; and Sociology 5, Anthropology.

Admission To The Professional Program (Of Five Year Curriculum) At Baltimore, Maryland

The first year of the Professional Program of the five year curriculum will be offered beginning September 1961. This program along with the pre-professional courses is given in summary forms on pages 4, 6, and 32.

1. FROM COLLEGE PARK DIVISION

Students who have completed the prescribed pre-professional program at College Park with a scholastic average of not less than C will qualify for admission to the pharmacy program at Baltimore.

2. FROM OTHER UNIVERSITIES AND COLLEGES

Applicants for admission must present evidence of having completed successfully two academic years of work in an accredited college* of arts and sciences based upon the completion of a four-year high school course or the equivalent in entrance examinations. The college course must consist of a minimum of 60 semester hours of credit exclusive of physical education, military science or similar courses. The 60 semester hours must include at least 6 hours of English, 6 hours of mathematics (algebra, trigonometry and analytical geometry), 4 hours of botany and 4 hours of zoology, or 8 hours of general biology, 8 hours of general inorganic chemistry, including qualitative analysis; 4 hours of quantitative chemistry, 8 hours of physics, 3 hours of economics and the remainder as electives. The electives must be selected from non-science areas and may include additional courses in English and economics, courses in history, philosophy, political science, psychology, sociology, speech and foreign languages.

All applicants for admission to the School of Pharmacy at Baltimore must have a scholastic average of not less than "C" (where the lowest passing grade is "D"), or its equivalent. The average shall be based on all college courses undertaken by the student in his pre-professional program, exclusive of credit in military science, physical education, hygiene or similar courses. Transfer

*Courses approved by the University of Maryland in non-accredited junior colleges within the State of Maryland may be accepted for credit requirements by the University. The year (not less than 24 hours of academic work) immediately prior to admission must be successfully completed in a regionally accredited college or university.

credit is given only for the courses completed with a grade of C or higher and which are a part of the pre-pharmacy curriculum.

3. APPLICATION PROCEDURES

Candidates seeking admission to the School of Pharmacy in Baltimore should write to the Office of the Dean requesting an application form. Each applicant should fill out the form in its entirety and mail it promptly, together with the application fee and photographs, to the Committee on Admissions of the School of Pharmacy, University of Maryland, Baltimore 1, Maryland. Candidates from schools other than the College Park Division of the University of Maryland must also request their high schools to furnish a transcript of their record to the Committee on Admissions. The Committee on Admissions will acknowledge the receipt of the application. If this acknowledgement is not received within ten days, the applicant should contact this committee immediately. Early filing of an application for admission is urged. Applicants wishing advice on any problem relating to their application should communicate with the Committee on Admissions.

Promising candidates will be required to appear before the Committee on Admissions for interview. On the basis of all available information, the best possible applicants will be offered admission.

A certificate of entrance will be offered to each successful applicant to permit him to matriculate and register in the class to which he has applied.

Admission To Advanced Standing In The Four Year Program In Baltimore

1. Request the Dean of the School of Pharmacy to send the preliminary application blank. Fill the blank out fully including the names of all schools and colleges which the candidate has attended. Sign the blank and return it with the required photographs and a seven dollar and fifty cent investigation fee to the Director of Admissions. (This fee will not be refunded or credited on any subsequent bill.)

2. Request your high school(s) to send a transcript of your record(s) to the Admissions Office. If these credentials appear satisfactory, the prospective student will be advised.

3. The Admissions Office acts continuously upon the applications of candidates whose credentials are complete, except for the final school record, and the School of Pharmacy notifies such candidates who appear satisfactory that they have been tentatively accepted.

Enrollment In The Pre-Professional Program At College Park

All students must enroll in person at the office of the School of Pharmacy at College Park during the registration period at the beginning of each semester. On registration day the student fills out necessary forms and class cards

and pays his fees. Detailed directions concerning dates and procedures are mailed during the summer to students who are eligible to enroll in the fall. All new students must matriculate.

All students must complete their registrations at the Office of the Registrar upon the days scheduled in the calendar. No student is permitted to enter classes until he has done so. Students who fail to register on the days and hours as announced are required to pay a late registration fee of five dollars.

There is a fee of \$3.00 for changes in registration made after the first week of instruction.

Tuition and Fees (Baltimore Campus)

FULL-TIME UNDERGRADUATE STUDENTS

Tuition Fee (per semester)

Residents of Maryland	\$135.00
Non-residents	160.00

<i>Laboratory Fee (per semester)</i>	15.00
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(This one fee covers all laboratory courses)

<i>*Student Union Fee (per annum)</i>	30.00
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<i>*Special Fee (per annum)</i>	10.00
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<i>*Student Union Fee (Summer Session)</i>	6.00
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<i>Student Activities Fee (per semester)</i>	10.00
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(This fee covers subscription to the yearbook, *Terra Mariae*, all expenses of School luncheons, picnics, dances.)

The tuition, laboratory and student activities fees for each semester are payable at the time of registration therefor. The Student Union fee and the Special fee are payable in full at the time of first registration. Students wishing to make arrangements for deferred payment of tuition charges must do so with the Financial Office at or prior to registration for the semester for which such charges are imposed.

Incidental Charges

For New Students Only (Not applicable to students transferring from School of Pharmacy, College Park)

Application fee (non-returnable)	7.50
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*The Student Union fee is payable by all students enrolled in the Professional Schools on the Baltimore Campus and is used to pay interest on and amortize the cost of construction of the Union Building. The Special fee is payable by all full-time students enrolled in the Professional Schools on the Baltimore campus and is used to finance the equipment needed for the Union Building. For students enrolling for the first time at the beginning of the second semester, the Student Union Fee will be \$15.00; the Special Fee will be \$5.00. All students carrying as much as 12 credit hours of work are considered full-time students subject to this fee.

All summer school students will pay a \$6.00 Student Union Fee. This Student Union Fee is in addition to the tuition, laboratory fees, and book charges, etc.

School of Pharmacy

Matriculation fee (non-returnable)	10.00
Deposit upon acceptance for admission	50.00
(This fee will be credited against the first semester's tuition.)	

For Seniors

Graduation Fee (To be paid in February of the Senior Year)	15.00
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Delinquencies and Breakage

Late Registration Fee	5.00
Special Examination Fee	5.00
Breakage—Students are required to pay for all breakage in excess of \$5.00 per year	

Other Expenses

Books and supplies, approximately	75-150.00
Students registering for more than a regularly scheduled semester's work will be charged additionally for each course.	
Fee for Changes in Registration after first week	3.00

PART-TIME UNDERGRADUATE STUDENTS

All students registered for twelve semester hours or more are considered full-time students. Part-time students are charged as follows:

Tuition Fee (for each semester hour per semester)	\$12.00
Laboratory Fees (per semester)	
Anatomy and Histology	10.00
Chemistry	12.00
Microbiology	11.00
Pharmacognosy	5.00
Pharmacology	10.00
Pharmacy	10.00
Physiology	10.00
*Student Union Fee (per annum)	6.00
*Student Union Fee (Summer Session)	6.00
Student Activities Fee (per semester)	10.00

*The Student Union fee is payable by all students enrolled in the Professional Schools on the Baltimore Campus and is used to pay interest on and amortize the cost of construction of the Union Building. The Special fee is payable by all full-time students enrolled in the Professional Schools on the Baltimore campus and is used to finance the equipment needed for the Union Building. For students enrolling for the first time at the beginning of the second semester, the Student Union Fee will be \$15.00; the Special Fee will be \$5.00. All students carrying as much as 12 credit hours of work are considered full-time students subject to this fee.

All summer school students will pay a \$6.00 Student Union Fee. This Student Union Fee is in addition to the tuition, laboratory fees, and book charges, etc.

GRADUATE STUDENTS

Matriculation fee (for new students only, non-returnable)	\$10.00
Tuition fee (per semester hour each semester)	12.00
Tuition fee for students carrying 10 or more semester credit hours (per semester)	120.00
Laboratory fee—Same as undergraduate schedule above	
*Student Union Fee (per annum)	30.00
*Student Union Fee (Summer Session)	6.00
*Special Fee (per annum)	10.00

Graduation Fee

Master's degree	10.00
Doctor's degree (including hood and microfilming of thesis)	50.00

REFUND OF FEES UPON WITHDRAWAL (BALTIMORE CAMPUS)

Students withdrawing from School at any time during the academic year, must file a written request for withdrawal with the Dean. Students who do not comply with this ruling are not issued an honorable dismissal and are not accorded any refund of tuition. Minors may withdraw only with the written consent of parent or guardian. Fees, excluding Application Fee, Matriculation Fee, Student Activities' Fee, the \$50.00 deposit on tuition, and any scholarship credit, are refunded to withdrawing students in accordance with the following schedule:

Period from date instruction begins:

Two weeks or less	80%
Between two and three weeks	60%
Between three and four weeks	40%
Between four and five weeks	20%
Over five weeks	No return

The date used in computing refunds is the date the application for withdrawal is filed in the Office of the Dean.

Text Books

Each student is required to have his own text books. The books required in each course will be announced at the beginning of each semester.

*The Student Union fee is payable by all students enrolled in the Professional Schools in the Baltimore Campus and is used to pay interest on and amortize the cost of construction of the Union Building. The Special fee is payable by all full-time students enrolled in the Professional Schools on the Baltimore campus and is used to finance the equipment needed for the Union Building. For students enrolling for the first time at the beginning of the second semester, the Student Union Fee will be \$15.00; the Special Fee will be \$5.00. All students carrying as much as 12 credit hours of work are considered full-time students subject to this fee.

All summer school students will pay a \$6.00 Student Union Fee. This Student Union Fee is in addition to the tuition, laboratory fees, and book charges, etc.

Tuition and Fees for Pre-professional Program (College Park Campus)

See pages 3 and 4 for summary statements and consult "Adventure in Learning" which is available from College Park, Maryland.

Changes In Curriculum

The Faculty Assembly reserves the right to make, at any time, such changes in the curriculum as may be found necessary or desirable.

Definition of Residence and Non-Residence

Students who are minors are considered to be resident students if at the time of their registration their parents have been domiciled in the State of Maryland for at least one year.

The status of the residence of a student is determined at the time of his first registration in the University, and may not thereafter be changed by him unless, in the case of a minor, his parents move to and become legal residents of Maryland by maintaining such residence for at least one full year. However, the right of the minor student to change from a non-resident status to resident status must be established by him prior to the registration period set for any semester.

Adult students are considered to be residents if at the time of their registration they have been domiciled in Maryland for at least one year provided such residence has not been acquired while attending any school or college in Maryland or elsewhere. *Time spent on active duty in the armed services while stationed in Maryland will not be considered as satisfying the one year period referred to above except in those cases in which the adult was domiciled in Maryland for at least one year prior to his entrance into the armed service and was not enrolled in any school during that period.*

The word "domicile" as used in this regulation shall mean the permanent place of abode. For the purpose of this rule only one domicile may be maintained.

Academic Regulations (College Park Campus)

Each entering student is subject to the rules and policies published in the official "University General and Academic Regulations."

Academic Regulations (Baltimore Campus)

ATTENDANCE REQUIREMENTS

Students who have not attended eighty-five percent of scheduled classes and laboratory periods for any subject are not admitted to the final examination in that subject. Absences due to illness and late registration are normally counted with the fifteen percent allowable absence. Lateness of more than half a period is construed as absence; two latenesses of less than half a period are also construed as an absence.

EXAMINATIONS

Written and oral quizzes are given throughout the semester at the discretion of the instructor. Final examinations are held at the end of each semester as scheduled on the calendar printed in this catalog.

Students unable to appear for final examinations must report to the Dean immediately. When the absence is justifiable, the Dean will grant permission for a deferred examination.

GRADING SYSTEM

The School uses the standard University of Maryland grading system:

<i>Grade</i>	<i>Interpretation</i>	<i>Point Value</i>
A	Excellent	4
B	Good	3
C	Fair	2
D	Poor but passing	1
F	Failure	0
I	Course work incomplete	replaced by definite grade when course requirements have been met

Standing in scholarship is based upon the grade-point average for the semester's work. This average is found by multiplying the grade received by the number of credit hours the course carries, e.g.:

<i>Subject</i>	<i>Credit</i>	<i>Grade</i>	<i>Points</i>
Chemistry	4	C	8
Microbiology	4	C	8
Pharmacognosy	4	B	12
Pharmacy	4	A	16
Pharmacy Administration	3	D	3
	19		47

Dividing the number of points by the number of credits, the student is found to have a grade point average of 2.47.

When, for any reason, a course is repeated, the final mark is used.

In computing scholastic averages only those courses taken in residence at the University of Maryland are considered.

MID-SEMESTER FAILURE WARNINGS

Each student is assigned to a Class Advisor who counsels him on his academic standing. Six weeks after the beginning of each semester, the Dean warns and the Advisor interviews all students earning grades of D and F.

INCOMPLETE WORK

The mark of I (incomplete) is exceptional. It is to be given only to a student whose work in a course has been qualitatively satisfactory, when, because of illness or other circumstances beyond his control, he has been unable to complete the requirement. Whenever the mark I is used the instructor enters on the class card a reason of the character stated above with an estimate of the quality of the student's work. In cases when this mark is given the student must complete the work assigned by the instructor by the end of the next semester in which that subject is again offered or the mark I becomes F.

RAISING GRADE OF D

Work of mark D, or of any passing mark, cannot be raised to a higher mark except by repeating the course. A student who repeats a course in which he failed or for which he has received credit for work done at the University, or elsewhere, must meet all the requirements of the course, including regular attendance, laboratory work, and examinations. His final mark will be substituted for the mark already recorded, but he will not receive any additional credit for the course. Although the final mark received in the course will be used in determining credit for promotion and graduation, it does not apply to honors and awards. See applicable section under "Honors and Awards".

REMOVAL OF AN F GRADE

A student receiving an F grade in any course and if not successful in raising his grade after repeating the course once, will be required to withdraw from the School of Pharmacy. In unusual cases, a student may be permitted, with the written permission of the Dean and the head of the department giving the course, to repeat the course for the second time. Such permission can be given to the student for only one course.

An appropriately supported petition for any exception to the above regulation must be submitted to the Faculty Council. Such exception will be granted under unusual and extraordinary circumstances and shall require the approval of the head of the department giving the course.

The above rules on removal of an F grade apply also to the student who is permitted to take the course at another institution to meet requirements for the degree from the School of Pharmacy of the University of Maryland.

REGULATIONS FOR PROMOTION AND PROBATION

All students, namely Juniors and Seniors of the four year program and all students in the professional program of the five year curriculum, at the School of Pharmacy are expected to maintain a grade point average of not less than 2.0 for each semester. Any student in the above categories who fails to maintain a grade point average of 2.0 for any semester will be placed on probation during the next semester. Students in the last year of either the four or five year program must maintain a grade point average of 2.0 to become eligible for graduation.

Students who fail more than one-fifth and less than one-half, in semester hour credit, of their scheduled work for any semester will be placed on probation during the next semester.

Any student on probation must pass all courses for which he is registered and must maintain a grade point average of 2.0 or he will be automatically dropped from the School of Pharmacy at the end of that semester.

A student who fails in one-half or more of his scheduled academic credits in any semester shall be dismissed at the end of that semester for unsatisfactory scholarship.

Any student who has been on probation for two semesters and then obtains a probation grade point average for a third semester will be automatically dropped at the end of that semester.

Any student who is dismissed from the School of Pharmacy is required to report to the Dean's Office for dismissal procedures.

REGULATIONS FOR READMISSION OF STUDENTS DROPPED FOR POOR ACADEMIC STANDING

A student who has been dropped for poor academic standing may apply in writing to the Dean for readmission after a lapse of at least one semester.

Any student who is readmitted shall be placed on probation for that semester.

Any student who has been dropped for poor academic standing may be readmitted only once.

REGULATIONS FOR REVIEW

In the application of the foregoing rules and regulations, the Faculty Assembly of the School of Pharmacy shall act as the final Board of Review. Any student may apply in writing to the Faculty Assembly for a reconsideration of his particular case.

GRADES OF STUDENTS WITHDRAWING FROM THE SCHOOL OF PHARMACY

The record of students who withdraw is computed as follows:

Before eight weeks of the semester have passed	WX
After eight weeks of the semester have passed, if work has been of passing grade	WP
After eight weeks of the semester have passed, if work has been of failing grade	WF

CLASSIFICATION OF STUDENTS—FOUR YEAR PROGRAM

Students having 30-64 credit hours with a grade-point average of 1.5 are classified as Sophomores.

Students having 65-104 credit hours with a grade-point of 1.5 are classified as Juniors.

Students having 105 or more credit hours with a grade-point average of 2.0 in the work of the Junior year are classified as Seniors.

Senior students must maintain a grade-point average of 2.0 in the work of the Senior year and have 144-146 credit hours to be considered as candidates for graduation, depending upon the year of their initial enrollment.

SENIOR ELECTIVE PROGRAM—FOUR YEAR PROGRAM

Students are required to elect either the RETAIL Major or the PRE-GRADUATE Major by May 1 of the Junior year. It is recommended that students electing the Pre-Graduate program will have attained a grade point average of at least 2.5 for the three previous years. Those who elect this major should also indicate their choice of electives in the Retail Major in case their average does not permit their election of the Pre-Graduate Major. The senior elective program must be approved by the Class Advisor and the Dean.

RETAIL Majors must choose between Pharmacy 81 and Pharmacy 121 and between Pharmacognosy 62 and Pharmacy 132. PRE-GRADUATE Majors after the 1960-61 academic year, must take Mathematics 20, 21, Calculus, and may be required to take Pharmacy 35, Professional Communications and Pharmacy 38, History of Pharmacy, instead of English 3,4, Composition and World Literature.

For further information consult with Class Advisor and see the Curriculum on page 30 of this catalog.

REQUIREMENTS FOR GRADUATION—FOUR YEAR PROGRAM

The degree of Bachelor of Science in Pharmacy will be conferred upon students who have spent at least the senior year in residence at the School of Pharmacy, who having entered prior to September 1956, have been accredited 144 semester hours instruction, or who having entered in September 1956 or thereafter, have been accredited with 146 semester hours instruction, and who have attained the required grade point standings and met the other requirements.

TRANSCRIPTS OF RECORDS

Students or alumni desiring transcripts of scholastic records may obtain them from the Registrar. The University rules regarding the issuance of transcripts are as follows: one copy of a student's record is made without charge; for additional copies, there is a fee of one dollar for each transcript, except when more than one copy is requested at the same time. In that case, one dollar is charged for the first copy and fifty cents for each additional copy.

Transcript records are of two kinds:

- (a) Informal transcripts which may be obtained by the student or alumnus for such personal use as he may wish; and

- (b) Official transcripts, bearing the University seal, which are forwarded, on request, to educational institutions, Government agencies, etc., as attested evidence of the student's record at the School of Pharmacy and his honorable dismissal therefrom.

No transcript of a student's record will be furnished in the case of any student or alumnus whose financial obligations to the School of Pharmacy have not been satisfied.

Registration With The Maryland Board of Pharmacy

The Maryland Pharmacy Law, as amended in 1931, requires all students entering upon the study of Pharmacy in the State to file application with the Maryland Board of Pharmacy. The law reads as follows:

"Any person enrolling as a student in pharmacy in any school or college of pharmacy in this state shall, not later than thirty days after enrolling, file with the Secretary of the Maryland Board of Pharmacy, an application for registration as a student of pharmacy in which said application he shall be required to furnish such information as the Board may deem appropriate, and simultaneously with the filing of said application, shall pay the Board a fee of one dollar; all such students of pharmacy shall, at the beginning of any subsequent school or college year, submit to the said Board a sworn statement of any and all actual drugstore experience acquired during the preceding vacation months."

Licensure Requirements of The Maryland Board of Pharmacy

The Maryland Board of Pharmacy will grant a certificate of registration to those persons deemed competent, after examination, by said Board of Pharmacy. Any person of good moral character who has attained the age of twenty-one years, is a graduate of a reputable school or college of pharmacy, and has completed one year as a registered apprentice in a drug store or pharmacy approved by said Board of Pharmacy for such purposes may sit for examination given for the purpose of registration.

A student may not obtain credit or practical experience in a drug store or pharmacy acquired prior to attendance as a regular student in a school or college of pharmacy or while in attendance at said school or college of pharmacy. Four months of the required practical pharmacy experience as a registered apprentice must be acquired subsequent to graduation from a recognized school or college of pharmacy, in a drug store or pharmacy approved by the Board for such purposes.

Prospective students are advised to contact the Secretary of the Maryland Board of Pharmacy, 301 West Preston Street, Baltimore 1, Maryland, for further information relative to the requirements for eligibility for licensure.

Department

The University reserves the right to request at any time the withdrawal of a student who cannot or does not maintain the required standard of scholarship,

or whose continuance in the University would be detrimental to his or her health, or the health of others, or whose conduct is not satisfactory to the authorities of the University.

Students of the last classification may be asked to withdraw even though no specific charge be made against them.

Employment

A student should be prepared to finance his education during the entire period of attendance, as all of his time should be spent in the preparation and completion of the scheduled work. Baltimore offers a number of opportunities to secure suitable employment, but it is recommended that students refrain from working during the school session.

Housing

1. WOMEN

A limited number of women may obtain housing accommodations in the Louisa Parsons Hall, 622 West Lombard Street, which is in close proximity to the School of Pharmacy. It offers comfortable living accommodations and it is under the general supervision of the Dean of Women. Bed linens, towels, pillows, blankets and curtains are provided as a part of the general furnishings of the room. Students are requested to bring their own bedspreads, an extra blanket, bureau scarves, small rugs and a laundry bag. The individual student assumes responsibility for all dormitory property assigned to her. Any damage done to property other than that which results from ordinary wear and tear will be charged to the student concerned. The room rates are as follows: Double Room, \$15.00 per month per person; Single Room, \$20.00 per month; Single Room with bath, \$25.00 per month.

Meals may be purchased at the University Cafeterias or in nearby restaurants.

2. MEN

Housing accommodations are available for men in the Baltimore Union. For particulars, see section immediately below.

General Information for The Baltimore Union

The Baltimore Union for students of the Professional Schools is located adjacent to the Professional Schools at 621 West Lombard Street. Accommodations for 195 men are provided in a five-story semi-air conditioned building which also contains a cafeteria, fountain lounge, meeting rooms, laundry facilities, game room, bookstore, barber shop and lounges on each floor. Double rooms are available. The rental agreement is made for rooms only; meals are served cafeteria style on a cash basis. The contract for accommodations covers the 1961-62 academic year.

ACADEMIC YEAR

Double Room Rates:

\$150.00 per semester (per person)

\$80.00 per eight weeks summer session (per person)

Single Room Rates:

\$45.00 per month

The three single rooms available will be assigned on the basis of length of residence in the Baltimore Union.

What the Rate covers:

The rate shown above is per person and includes the following:

Room furnishings, bed and cover, mattress, chest of drawers, closet, book shelves, desk, medicine cabinet, desk chair and desk lamp.

Maid service will include cleaning of room twice per week and replacement of change of linen once each week.

Telephone service is available through the Chesapeake & Potomac Telephone Company. Cost of the telephone is not included in the room rate. Information can be obtained from the Manager's office.

Mail service is also provided.

The resident provides blankets, pillow, towels and linens of which the latter two must be rented through the designated Commercial Rental Service.

A small amount of luggage space is available. Storage of anything other than luggage will *not* be available.

TRANSIENTS

The Rates are:

\$ 4.00 per day

\$24.00 per week

What the Rate covers:

The services will include one bath towel, one face towel, one face cloth, soap and change of linen daily (once per week if weekly guest).

HOW TO APPLY FOR A ROOM ASSIGNMENT

Write:

MANAGER'S OFFICE
The Baltimore Union
621 West Lombard Street
Baltimore 1, Maryland

Parking

The University of Maryland does not provide any parking facilities on university parking lots for students on the Baltimore Campus.

The Health Sciences Library

The new Health Sciences Library was opened for the Fall Term of the 1960-1961 School Year. This new library building includes the collections of the Pharmacy, Dental, Medical, and Nursing Schools.

The Rules and Regulations by the library will be available for distribution at the time of registration of students in the 1961 Fall Term.

Professorships, Graduate Fellowships and Grants

The Emerson Professorship of Pharmacology

Captain Isaac E. Emerson, of Baltimore, gave to the School of Pharmacy in 1927, a sum of money to establish a professorship of Pharmacology. The first appointment was made in 1930 when Dr. Marvin R. Thompson was designated Emerson Professor of Pharmacology. The chair was subsequently held by the late Dr. Clifford W. Chapman. Dr. Casimir T. Ichniowski, the present incumbent, was appointed June 15, 1951.

American Foundation for Pharmaceutical Education Fellowships

The American Foundation for Pharmaceutical Education offers annual fellowships of one thousand to fifteen hundred dollars to promising graduate students desirous of doing research in pharmacy, pharmaceutical chemistry, pharmacology, and pharmacognosy; non-veteran students may also apply for an additional allowance of five hundred dollars for tuition, fees, and supplies. Address applications directly to the American Foundation for Pharmaceutical Education, 777 Fourteenth Street, N.W., Washington 5, D. C.

The H. A. B. Dunning Research Fellowship

Dr. H. A. B. Dunning, an alumnus of the School of Pharmacy, former associate professor of chemistry, and prominent manufacturing pharmacist of Baltimore, has contributed annually since 1930 a sum of money to maintain a research fellowship in pharmaceutical chemistry. The fellowship is open to promising graduate students interested in pharmaceutical chemistry.

Centennial Research Fund Fellowships

At the celebration of the hundredth anniversary of the founding of the School of Pharmacy, a sum of money was collected to provide two fellowships for research studies in the following fields: pharmacy, pharmaceutical chemistry, pharmacology, microbiology, and pharmacognosy. The selection of candidates for these fellowships will be made by the Faculty Assembly with the approval of the Dean.

The Noxzema Foundation Fellowship

The Noxzema Foundation, Inc., is contributing a fund not to exceed \$1600.00 for a graduate fellowship open to United States citizens. A candidate

will be selected on the basis of his educational qualifications by the Fellowship Committee of the School of Pharmacy of the University of Maryland to which the Noxzema Foundation, Inc. may appoint a non-voting member. This fellowship may be renewed annually at the discretion of the grantors.

Research Grant of the Alumni Association of the School of Pharmacy

The Alumni Association of the School of Pharmacy gives to the School each year the sum of \$100.00 to be used as a research grant for a student selected by the Committee on the Research Grant of the Alumni Association to enable the student to engage in pharmaceutical research in the School of Pharmacy. The research conducted must be of general pharmaceutical interest and must be accepted upon completion for publication in one of the pharmaceutical journals.

Other Research Grants

The Department of Pharmaceutical Chemistry has substantial grants from the Smith, Kline & French Laboratories and the National Institutes of Health. Through these grants, the School of Pharmacy is able to provide a number of research fellowships available to graduate and post-doctoral students in pharmaceutical chemistry.

Assistantships

Graduate Assistantships

Graduate assistantships, covering tuition and laboratory fees and carrying a stipend of \$2,000.00 for a ten-month academic year, are available to qualified students giving fourteen hours of laboratory and teaching services to the departments in which they serve. Such assistants can usually carry two-thirds of the normal graduate work.

Residencies in Hospital Pharmacy

1. University (of Maryland) Hospital

The Department of Pharmacy of the University Hospital together with the School of Pharmacy and the Graduate School of the University of Maryland offer annually, to qualified graduate pharmacists, residencies in hospital pharmacy. The appointments beginning July first are for twenty-four months. During the period of appointment the resident divides his time between hospital pharmacy and graduate study leading to the Master of Science degree granted by the University of Maryland and a certificate of residency to be awarded by the University Hospital. Full time training will be required during the summer of 1962. Two weeks of vacation are allowed during the term of appointment. The University Hospital provides a stipend of \$2400.00 per year for the first year as Assistant Resident. Completion of the Assistant Residency leads to appointment as Resident with a stipend of \$3000.00 per year. Parking space, uniforms and laundering of uniforms are free of charge. The residents

must pay the tuition, laboratory and other fees for graduate work in the University.

Complete information on this program may be secured by addressing inquiries to the Director of Pharmaceutical Services, University Hospital, Baltimore 1, Maryland or to the Dean of the School of Pharmacy, University of Maryland, Baltimore 1, Maryland.

2. The Johns Hopkins Hospital Pharmacy

The Pharmacy Department of the Johns Hopkins Hospital, together with the School of Pharmacy and the Graduate School of the University of Maryland, offer annually to qualified graduate pharmacists several residencies in hospital pharmacy. The appointments, beginning September first, run for twenty-two months. During twenty months, appointees devote half time to hospital pharmacy service and half time to graduate work leading to the Master of Science degree granted by the University of Maryland and a certificate of residency awarded by the Johns Hopkins Hospital. Full time training in the Johns Hopkins Hospital Pharmacy is required for two (2) months during the summer of 1962. Four weeks of vacation are allowed during the term of appointment. The Hospital provides a stipend of \$200.00 per month and the School of Pharmacy reduces tuition fees for these candidates by 25%. However, candidates must pay the regular laboratory fees.

Complete information on this program may be secured by addressing inquiries to the Chief Pharmacist, Johns Hopkins Hospital, Baltimore 5, Maryland, or the Dean of the School of Pharmacy, University of Maryland, Baltimore 1, Maryland.

Scholarships and Loans (College Park Campus)

All requests for information concerning College Park scholarships and loans should be directed to:

Director, Student Aid
University of Maryland
College Park, Maryland

*Alumni Association of the School of Pharmacy Scholarships**

The Alumni Association of the School of Pharmacy of the University of Maryland makes available annually scholarships to qualified pre-pharmacy students on the basis of worthiness, moral character, scholastic achievement and the need for financial assistance. These scholarships are open only to residents of the state of Maryland. Each scholarship not exceeding \$500.00 per academic year

*These scholarships are awarded by the Committee on Scholarships and Grants-in-Aid of the University of Maryland in cooperation with the Scholarship Committee of the Alumni Association of the School of Pharmacy and the Maryland Pharmaceutical Association.

is applied in partial defrayment of fees and expenses at College Park.

*Maryland Pharmaceutical Association Scholarships**

The Maryland Pharmaceutical Association make available annually scholarships to pre-pharmacy students on the basis of worthiness, moral character, scholastic achievement and the need for financial assistance. Each scholarship not exceeding \$500.00 per academic year is used in partial defrayment of fees and expenses at College Park. These scholarships are open only to residents of the state of Maryland.

*Read's Drug Stores Foundation Scholarships**

The Read's Drug Stores Foundation contributes annually several scholarships to pre-pharmacy students on the basis of worthiness, scholastic achievement, moral character and the need for financial assistance. Each scholarship not exceeding \$500.00 per academic year is applied to defray partially the fees and expenses at College Park, Maryland. Recipients must have been residents of the state of Maryland for at least one year prior to the awarding of the scholarship.

For information concerning other scholarships and the loans available consult the University bulletin "Adventure in Learning" available from College Park, Maryland.

Scholarships and Loans (Baltimore Campus)

All requests for information concerning scholarships should be addressed to Dean Noel E. Foss, School of Pharmacy, University of Maryland, 636 W. Lombard St., Baltimore 1, Maryland. The selection of the recipients of the scholarships and loans is made by the Dean in conjunction with a committee of the Faculty of the School of Pharmacy.

Alumni Association School of Pharmacy Scholarships

The Alumni Association of the School of Pharmacy of the University of Maryland makes available annually scholarships worth \$100.00 per semester to qualified students who have maintained a superior scholastic average and who are in need of financial assistance to complete their education.

Alumni Association University of Maryland Scholarship

The General Alumni Council of the University Alumni Association provides a scholarship in the amount of \$250.00. The award is based on scholarship, leadership and need.

*These scholarships are awarded by the Committee on Scholarships and Grants-in-Aid of the University of Maryland in cooperation with the Scholarship Committee of the Alumni Association of the School of Pharmacy and the Maryland Pharmaceutical Association.



DUNNING HALL
of the School of Pharmacy of the University of Maryland at Baltimore



1. University Hospital—UH
2. The Psychiatric Institute—PI
3. Davidge Hall—DVH
4. Bressler Research Building—B
5. Law Building—LB
6. Gray Laboratory—GL
7. Medical Technology Building—
8. Administration Building—AB
9. Dentistry-Pharmacy Building—

INSTRUCTORS:

*Mr. Earl F. Becker, Jr.	200 Preston Court	Ri. 7-2817	Catonsville 28
Mr. Robert J. Kokoski	1218 Maiden Choice Lane	Ci. 2-5479	Baltimore 29
*Mr. Dean E. Leavitt	509 Castle Drive, Apt. E	Dr. 7-6330	Baltimore 12
*Mr. Phillip J. Levine	5612 Haddon Avenue, Apt. C	Li. 2-9850	Baltimore 7

LECTURERS:

*Mr. Richard D. Dean	10 Forest Drive	Ri. 7-2703	Catonsville 28
*Mr. Joseph S. Kaufman	2302 South Road	(Home) Fo. 7-2776	Baltimore 9
		(Office) Le. 9-1812	

GRADUATE ASSISTANTS:

*Mr. Stanley L. Becker	4285 Labyrinth Road	358-1469	Baltimore 15
Mr. Paul C. Bossle	621 West Lombard Street	Sa. 7-9317	Baltimore 1
Mr. Louis Diamond	4908 Queensberry Avenue	Fo. 7-6330	Baltimore 15
*Mr. Gerald S. Gordon	3700 Kingwood Square	Ro. 4-7041	Baltimore 15
*Mr. Carl L. Heifetz	7029 Surrey Drive	Ro. 4-6820	Baltimore 15
Mr. Stanley A. Koch	621 West Lombard Street	Le. 9-9731	Baltimore 1
Miss Marion I. Manion	2730 N. Charles Street (Ext. 75)	-Ho. 7-5200	Baltimore 18
*Mr. M. David Richman	2500 Loyola Southway	Li. 2-3786	Baltimore 15
Mr. Francis J. Tinney	621 West Lombard Street		Baltimore 1
*Dr. Mu Tsu Wu	40 Parkin Street	727-7259	Baltimore 1

UNIVERSITY OF MARYLAND
SCHOOL OF PHARMACY

Faculty and Staff, 1961-62

DEAN

*Dr. Noel E. Foss

401 Dixie Drive

Va. 5-1027 Towson 4

PROFESSOR EMERITUS:

Dr. B. Olive Cole

3800 Beech Avenue

Ch. 3-6464 Baltimore 11

PROFESSORS:

*Dr. Casimir T. Ichniowski

625 Woodbine Avenue

Va. 3-1821 Towson 4

*Dr. Francis M. Miller

1109 Gary Drive

Ri. 7-6218 Catonsville 28

Dr. W. Arthur Purdum

123 Market Place (Burrough Bros.)

Pl. 2-6733 Baltimore 2

*Dr. Donald E. Shay

205 Hilltop Road

St. 9-6136 Linth. Hghts.

*Dr. Frank J. Slama

348 Broadmoor Road

Id. 5-2829 Baltimore 12

ASSOCIATE PROFESSORS:

*Dr. Benjamin F. Allen

4416 Hillside Avenue

Ci. 2-0648 Baltimore 29

*Dr. Leslie C. Costello

4 Woodview Road

Ho. 5-2428 Ellicott City

*Dr. Norman J. Doorenbos

211 Regency Circle

St. 9-8972 Linthicum

ASSISTANT PROFESSORS:

Ther. Inverett
10-3-61

GREENE ST.



PUS
 RYLAND
 Clinic—DC
 Residence (Parsons Hall)—PH
 of Nursing (Whitehurst Hall)—WH
 of Pharmacy (Dunning Hall)—DH
 Memorial—KM
 Sciences Library—HSL
 Patient Department—OPD
 Baltimore Union—BU
 Eager Howard Hall
 e



The Baltimore Union

American Foundation for Pharmaceutical Education Scholarships

The American Foundation for Pharmaceutical Education makes available scholarships worth \$100.00 per semester to qualified junior and senior students who have maintained an average of "B" or above and who are in need of financial assistance to complete their schooling.

Carroll Chemical Company Scholarship

The Carroll Chemical Company of Baltimore, Maryland, initiated in 1956 a fund to provide one undergraduate scholarship to a qualified student in the first year of the professional program who has maintained a superior scholastic average and is in need of financial assistance. This scholarship includes the cost of tuition, fees, textbooks and equipment, not to exceed \$500.00 per academic year.

The Charles Caspari, Jr., Memorial Scholarship

In memory of Prof. Charles Caspari, Jr., former dean of the School of Pharmacy, a number of his friends and Alumni have made an endowment for a scholarship worth \$100.00 annually.

The Charles Landon Henry Memorial Scholarship

In memory of her husband, Charles Landon Henry, for many years a member of the Maryland Pharmaceutical Association, Mrs. Nora Howard Henry has endowed a scholarship worth \$100.00 to be awarded annually by the Scholarship Committee of the School of Pharmacy, University of Maryland to a senior student who has shown superior proficiency in practical and commercial pharmacy.

A. M. Lichtenstein Scholarship

In memory of her husband, A. M. Lichtenstein, distinguished alumnus of the School of Pharmacy, Class of 1889, the late Mrs. Francina Freese Lichtenstein bequeathed a sum of money to endow a scholarship to be awarded annually to a resident of Allegheny County, Maryland. The recipient of the award is to be selected on the basis of financial need, character and scholarship.

The Noxzema Foundation Scholarships

The Noxzema Foundation, Inc. is contributing a fund to provide one or two undergraduate scholarships not to exceed \$500 each, open to citizens of the United States. Candidates will be selected on the basis of their educational qualifications by the Scholarship Committee of the School of Pharmacy of the University of Maryland to which the Noxzema Foundation, Inc. may appoint a non-voting member. This scholarship may be renewed annually at the discretion of the grantors.

The Ladies' Auxiliary, Prince Georges-Montgomery County Pharmaceutical Association Scholarship

The Ladies' Auxiliary, Prince Georges-Montgomery County Pharmaceutical Association provides a scholarship in the amount of \$50.00 to a student who has maintained a superior scholastic average and who is in need of financial aid.

Read's Drug Stores Foundation Scholarships

The Read's Drug Stores Foundation of Baltimore, Maryland, contributes funds to provide scholarships paying \$100.00 per semester to qualified students who have maintained a superior scholastic average and who are in need of financial assistance to complete their schooling.

Rose Hendler Memorial Loan Fund

L. Manuel Hendler and Family have established a loan fund in memory of Mrs. Rose Hendler for needy students. This fund is available to qualified junior and senior students only, and loans therefrom are made upon the recommendation of the Dean.

NDEA Student Loans

The National Defense Education Act of 1958 provides funds for student loans. A student may borrow in one year a sum not exceeding \$800 and during his entire course of study may borrow a sum not exceeding \$5000. The borrower must sign a note for the loan and agree to interest and repayment terms established by the University. Repayment of the loan begins one year after the borrower ceases to be a full time student and must be completed within ten years thereafter. No interest is charged on the loan until the beginning of the repayment schedule. Interest after that date is to be paid at the rate of 3 per cent per annum.

Honors and Awards

The Dean's Honor List

The Dean publishes at the end of each semester a list of those students who have maintained an average of "B" or better during the semester. Students whose names appear on the list both semesters receive the School's Academic Medal at the Honors Day Convocation held in June of each year.

In computing the grade point standing for the Dean's Honor Roll, if a student repeats more than one course in any year, both grades earned for these courses will be averaged in determining grade point standing.

Phi Kappa Phi Honorary Fraternity

The University of Maryland Chapter of Phi Kappa Phi, a national fraternity for honor students in all branches of learning, was established at the University

in 1920. Qualified students at the School of Pharmacy are eligible by invitation to join this honorary fraternity at the end of the first semester of the Junior Year.

Rho Chi Honorary Pharmaceutical Society

Omicron Chapter of Rho Chi, national honorary pharmaceutical society, was established at the University of Maryland in 1930. Charters for chapters of this organization are granted only to groups in schools or colleges who are members in good standing of the American Association of Colleges of Pharmacy. Eligibility for membership in the Society is based on high attainment in scholarship, character, personality, and leadership. All candidates selected for membership must have completed seventy-five credit hours of college work and must be approved by the Dean of the School of Pharmacy.

The Society has awarded annually a Remington's "Practice of Pharmacy" to the sophomore student of high moral character who, having completed forty-eight credit hours of college work, has attained the highest scholastic average in his class and a grade-point average of 3.0 or above.

The School of Pharmacy Gold Medal

A gold medal is awarded annually to the candidate for the degree of Bachelor of Science in Pharmacy who has attained the highest general average, provided that this average is not below the grade of "B". Certificates of Honor are awarded to the three students having the next highest general averages, provided these averages do not fall below the grade of "B".

Honorable mention is made annually of the first three junior students having the highest general averages, provided these averages do not fall below the grade of "B".

Only courses taken at the University of Maryland are considered in awarding these honors.

The William Simon Memorial Prize

In honor of the late Dr. William Simon, for thirty years a professor of chemistry in the School of Pharmacy, a gold medal is awarded annually by the Faculty Assembly to a candidate for the degree of Bachelor of Science in Pharmacy who has done superior work in the field of practical and analytical chemistry. The recipient must stand high in all subjects. In recommending a student for the prize, the professor of chemistry is guided in his judgment of the student's ability by observation and personal contact as well as by grades.

The Andrew G. DuMez Medal

In memory of Dr. Andrew G. DuMez, late dean and professor of pharmacy at the School of Pharmacy, Mrs. Andrew G. DuMez has provided a gold medal to be awarded annually by the Faculty Assembly to a candidate for the degree of Bachelor of Science in Pharmacy for superior proficiency in pharmacy.

The L. S. Williams Practical Pharmacy Prize

The late L. S. Williams left a trust fund, the income of which is awarded annually by the Faculty Assembly of the School of Pharmacy to the senior student having the highest general average throughout the course in practical and dispensing pharmacy.

The Conrad L. Wich Pharmacognosy Prize

In appreciation of assistance which the Maryland College of Pharmacy extended to him as a young man, Mr. Conrad L. Wich provided a fund, the income from which is awarded annually by the Faculty Assembly of the School to the senior student who has done exceptional work throughout the course in pharmacognosy.

The Wagner Pharmaceutical Jurisprudence Prize

In memory of her late husband, Mr. Manuel B. Wagner, and her late son, Mr. Howard J. Wagner, both alumni of the School of Pharmacy, Mrs. Sadie S. Wagner, together with her daughter, Mrs. Phyllis Wagner Brill, have provided a fund the income of which is awarded annually by the Faculty Assembly to a senior student for meritorious academic achievement in pharmaceutical jurisprudence.

David Fink Memorial Prize

In memory of David Fink '24, Mr. Samuel I. Raichlen gives a new United States Dispensatory as a prize to the senior student recommended by the Faculty Assembly for proficiency in the general practice of pharmacy.

Phi Beta Chapter, Phi Sigma Delta Fraternity Cup

The Phi Beta Chapter of the Phi Sigma Delta Fraternity provides a cup in memory of Joseph J. Fine, Melvin S. Adalman and Albert Goldberg, who died in the service of their country. This cup is awarded annually to the senior student selected by the Faculty Assembly as having exhibited outstanding qualities of character and leadership.

Alpha Zeta Omega Fraternity Prize

The Kappa Chapter and the Maryland Alumni Chapter of the Alpha Zeta Omega Fraternity provide a prize to be awarded annually to the senior student chosen by the Faculty Assembly for proficiency in pharmacology.

Epsilon Alumnae Chapter, Lambda Kappa Sigma Sorority Prize

The Epsilon Alumnae Chapter of the Lambda Kappa Sigma Sorority provides annually a key which is awarded to the senior student selected by the Faculty Assembly for outstanding proficiency in Pharmacy Administration.

Merck Award

Merck & Company, Inc., Rahway, New Jersey, offers a set of valuable reference books to the senior student who attains a high standing in pharmacy.

Bristol Laboratories, Inc. Award

A copy of Gould's "Medical Dictionary" is made available by Bristol Laboratories, Inc., to the senior student who has contributed the most to pharmacy through his extra-curricular activities.

Rexall Award

The Rexall Drug Company provides a Mortar and Pestle Trophy to the senior student who has demonstrated outstanding qualities of both leadership and scholarship.

Extra Curricular Awards

Students who have given freely of their time for the betterment of the School in extra-curricular activities, receive extra curricular keys at the annual Honors Day Convocation.

Student Organizations (Baltimore Campus)

Student Government Alliance

The Student Government Alliance of the School of Pharmacy is an organization of undergraduate students established for the purpose of aiding in the internal administration of the school, for organizing all extra-curricular programs and activities of the student body and for coordinating these programs and activities with those of the Faculty and Administration to foster mutual understanding and cooperation. The Executive Council of the Student Alliance is composed of the President of the Student Government Alliance, the Presidents of the respective classes, and one delegate elected from each undergraduate class.

Student Branch of the American Pharmaceutical Association

The purpose of the Student Branch is to encourage in the broadest and most liberal manner the advancement of pharmacy as a science and as a profession in accordance with the objectives stated in the Constitution of the American Pharmaceutical Association, especially in fostering education in matters involving pharmacy in all of its branches and its application and aiding in promoting the public health and welfare.

Inter-Professional Student Senate

The students of the Baltimore Professional Schools of Dentistry, Law, Medicine, Nursing and Pharmacy established the Inter-Professional Student Senate for purposes of coordinating and facilitating relationships among the Professional Schools and the University Units at College Park.

The Senate is comprised of representatives from each of the five professional schools.

*Committee on School of Pharmacy of the Maryland
Pharmaceutical Association*

When the School of Pharmacy became a part of the State University in 1920, the Maryland Pharmaceutical Association appointed a standing committee known as the Committee on the School of Pharmacy. The duties of this group are to represent the Association in all matters pertaining to the School of Pharmacy and pharmaceutical education. The present members of the Committee are:

Frederic T. Berman, Chairman
Stephen J. Provenza, Co-Chairman
Samuel I. Raichlen, Co-Chairman

Francis S. Balassone	John A. Crozier
Harry Bass	H. A. B. Dunning
A. Lester Batie	Charles W. Feldman
Frank Block	Howard L. Gordy
W. L. Brunnett	Victor H. Morgenroth, Jr.
Jerome J. Cermak	Henry G. Seidman
Bernard Cherry	Simon Solomon
Irving I. Cohen	John F. Wannenwetsch

H. Nelson Warfield

Alumni Association

A meeting of the graduates of the School of Pharmacy of the University of Maryland, then the Maryland College of Pharmacy, was held on May 15, 1871. At this meeting there was organized the Society of the Alumni of the Maryland College of Pharmacy. This Society continued its separate existence as such or as the Alumni Association of the Maryland College of Pharmacy until 1907, when the General Alumni Association of the University of Maryland was formed. Following the organization of the General Alumni Association, the Society remained dormant until June 4, 1926, when it was reorganized as the Alumni Association of the School of Pharmacy, University of Maryland. Each year it is more evident that interest in the Alumni Association is not only maintained, but is growing.

Officers (1960-61)

Mrs. Frank M. Budacz	Honorary President
Irving I. Cohen	President
James P. Cragg, Jr.	First Vice President
Samuel A. Goldstein	Second Vice President
Frank J. Slama	Executive Secretary
H. Nelson Warfield	Treasurer

Executive Committee (Elected Members)

Victor H. Morgenroth, Jr., Chairman

Milton A. Friedman

Robert J. Kokoski

John F. Neutze

FOUR YEAR CURRICULUM

SUMMARY OF HOURS AND CREDITS

TITLE AND NUMBER OF COURSE	FIRST SEMESTER				SECOND SEMESTER			
	Hrs. Per Week				Hrs. Per Week			
	Didactic	Lab'y	Total	Credits	Didactic	Lab'y	Total	Credits
FRESHMAN YEAR								
*Chemistry 1, 3, General Inorganic and Qualitative Analysis.....	2	6	8	4	2	6	8	4
*English 1, 2, Survey and Composition.....	3		3	3	3		3	3
*Mathematics 0, Basic.....	3		3	0				
*Mathematics 10 or 15.....	3		3	3				
*Mathematics 11 or 17.....					3		3	3
*Modern Language 1, 2, or 6, 7, French or German.....	3		3	3	3		3	3
**Pharmacy 1, 2, Orientation.....	1		1	1	1		1	1
*Speech 1, 2, Public Speaking.....	1		1	1	1		1	1
*Zoology 1, General.....	2	6	8	4				
*Zoology 4, Animal Kingdom.....					2	3	5	3
				19				18
SOPHOMORE YEAR								
**Chemistry 15, Quantitative Analysis.....	2	6	8	4				
†Chemistry 35, 37, Elementary Organic.....	3		3	2	3		3	2
†Chemistry 36, 38, Elementary Organic Laboratory.....		4	4	2		4	4	2
**Pharmacy 21, 22, General.....	4	3	7	5	4	3	7	5
*Physics 10, 11, General.....	3	2	5	4	3	2	5	4
**Physiology 22, General.....					4	3	7	5
				17				18
JUNIOR YEAR								
Chemistry 53, Pharmaceutical Testing and Assaying.....					2	6	8	4
Chemistry 153, Biological.....	4	4	8	5				
Microbiology 1, Pharmaceutical.....	2	4	6	4				
Microbiology 115, Serology and Immunology.....					2	4	6	4
Pharmacognosy 51, 52, General.....	2	5	7	4	2	5	7	4
Pharmacy 51, 52, Dispensing.....	2	6	8	4	2	6	8	4
Pharmacy 61, History of Pharmacy.....	1		1	1				
Pharmacy Administration 37, Fundamentals of Economics.....					3		3	3
				18				19
SENIOR YEAR (Required)								
Chemistry 111, 113, Chemistry of Medicinal Products.....	3		3	3	3		3	3
First Aid 1, Standard.....	1		1					
Pharmacology 81, 82, General.....	3	4	7	4	3	4	7	4
Pharmacy 101, 102, Advanced Dispensing.....	2	3	5	3	2	3	5	3
Pharmacy Administration 21, Accounting.....	1	3	4	2				
Pharmacy Administration 62, Jurisprudence.....					3		3	3
Electives*.....				7				5
				19				18
†(Electives—Retail Major)								
Pharmacognosy 61, Entomology for Pharmacists.....	2	3	5	3				
Pharmacognosy 62, Animal Health Products or.....					3		3	3
Pharmacy 132, Cosmetics.....					2	3 or	5	3
Pharmacy 121, Hospital Pharmacy Administration.....	2		2	2				
or.....		or						
Pharmacy 81, Pharmacy Literature.....	2		2	2				
Pharmacy Administration 71, Management.....	2		2	2				
Pharmacy Administration 72, Drug Marketing.....					2		2	2
†(Electives—Pre-Graduate Major)								
†English 3, 4, Composition and World Literature.....	3		3	3	3		3	3
or.....		or				or		
*Language 6, 7, Intermediate Scientific German.....	3		3	3	3		3	3
†Mathematics 20, 21, Calculus.....	3		3	3	3		3	3
(Electives—Special Cases)								
Chemistry 99, Glassworking.....		3	3	1		3	3	1
Chemistry 112, 114, Chemistry of Medicinal Products.....		4	4	2		4	4	2

† Instruction in these courses given by the College of Arts and Sciences.

‡ The electives must be approved by the Class Advisor and Dean.

* Course, formerly given by the College of Arts and Sciences, no longer offered at Baltimore.

** Course not offered after 1960-61

FOUR YEAR CURRICULUM

SUMMARY OF HOURS AND CREDITS

COURSE	Didactic	Laboratory	Total	Credit hours
FRESHMAN YEAR				
*Chemistry 1, 3	64	192	256	8
*English 1, 2	96		96	6
*Mathematics 10, 15	48		48	3
*Mathematics 11, 17	48		48	3
*Modern Language 1, 2 or 6, 7	96		96	6
**Pharmacy 1, 2	32		32	2
*Speech 1, 2	32		32	2
*Zoology 1, 4	64	144	208	7
Total	480	336	816	37
SOPHOMORE YEAR				
**Chemistry 15	32	96	128	4
*Chemistry 35, 37	96		96	4
*Chemistry 36, 38		128	128	4
**Pharmacy 21, 22	128	96	224	10
*Physics 10, 11	96	64	160	8
**Physiology 22	64	48	112	5
Total	416	432	848	35
JUNIOR YEAR				
Chemistry 53	32	96	128	4
Chemistry 153	64	64	128	5
Microbiology 1	32	64	96	4
Microbiology 115	32	64	96	4
Pharmacognosy 51, 52	64	160	224	8
Pharmacy 51, 52	64	192	256	8
Pharmacy 61	16		16	1
Pharmacy Administration 37	48		48	3
Total	352	640	992	37
SENIOR YEAR (Required)				
Chemistry 111, 113	96		96	6
First Aid	16		16	
Pharmacology 81, 82	96	128	224	8
Pharmacy 101, 102	64	96	160	6
Pharmacy Administration 21	16	48	64	2
Pharmacy Administration 62	48		48	3
Electives	224†	160†	384†	12
Total	560	432	992	37
(Electives—Retail Major)				
Pharmacognosy 61	32	48	80	3
Pharmacognosy 62 or	48		48	3
Pharmacy 132	32	48	80	3
Pharmacy 121 or	32		32	2
Pharmacy 81	32		32	2
Pharmacy Administration 71	32		32	2
Pharmacy Administration 72	32		32	2
(Electives—Pre-Graduate Major)				
†English 3, 4 or	96		96	6
*Language 6, 7	96		96	6
*Mathematics 20, 21	96		96	6
(Electives—Special Cases)				
Chemistry 99		96	96	2
Chemistry 112, 114		128	128	4
SUMMARY				
Freshman Year	480	336	816	37
Sophomore Year	416	432	848	35
Junior Year	352	640	992	37
Senior Year	560	432	992	37
Total	1,808	1,840	3,648	146***

* Course formerly given by the College of Arts and Science no longer offered at Baltimore.

** Course not offered after 1960-61.

*** A minimum of 144 credits required for students entered prior to September 1956 and 146 credits for those entering in September 1956 and thereafter.

† Average.

‡ Instruction in these courses given by the College of Arts and Sciences.

DESCRIPTION OF COURSES**
FOUR YEAR CURRICULUM
CHEMISTRY

*1, 3. *General Inorganic Chemistry and Qualitative Analysis*—(4, 4)
Freshman year, two lectures, two laboratories.

A study of the metals and non-metals with emphasis on chemical theory and important generalizations. The laboratory work deals with fundamental principles, the preparation and purification of compounds, and the systematic qualitative analysis of the more common cations and anions.

35, 37. *Elementary Organic Chemistry*—(2, 2)
Sophomore year, two lectures (Miller and Warfield)
Prerequisite—Chemistry 1, 3. A study of the fundamentals of organic chemistry.

36, 38. *Elementary Organic Laboratory*—(2, 2)
Sophomore year, one laboratory. (Miller and Warfield)
Prerequisite—Chemistry 35, 37 or current registration therein. A study of the general procedures used in organic laboratory.

***15. *Quantitative Analysis*—(4)
Sophomore year, first semester, two lectures and two laboratories. (Doorenbos and Lo)

Prerequisites—Chemistry 1, 3. A study of the gravimetric and volumetric procedures and theory, and their application to pharmaceutical analyses.

53. *Pharmaceutical Testing and Assaying*—(4)
Junior year, second semester, two lectures and two laboratories. (Doorenbos, Zenker, Lo and Konopik)

Prerequisites—Chemistry 15, 35, 37, or concurrent registration therein. Quantitative methods applied to the chemical assay of crude drugs and of official preparations, with an introduction to instrumental methods.

99. *Glassworking*—(1, 1)
Laboratory, senior year, either semester. (Miller.)
Prerequisite—Consent of the instructor. Simple operations in the manipulation of glass, repair and construction apparatus.

For Graduates and Advanced Undergraduates

111, 113. *Chemistry of Medicinal Products*—(3, 3)
Senior year, three lectures. (Doorenbos.)
Prerequisite—Chemistry 35, 37, 53. A survey of the structural relationships, the synthesis and chemical properties of medicinal products.

*Course, formerly given by the College of Arts and Sciences, not offered at Baltimore.

**Courses intended primarily for sophomores are numbered 1-49; for juniors and seniors 50-99; for advanced undergraduates and graduates 100-199; and for graduates only 200-399.

The semester hour, which is the unit of credit, is the equivalent of a subject pursued one period a week for one semester. A laboratory period is equivalent to one lecture or recitation period.

***Course not offered after 1960-61.

141, 143. *Advanced Organic Chemistry*—(2, 2)

Two lectures.

(Miller.)

Prerequisites—Chemistry 35, 36, 37, 38. An advanced study of the compounds of carbon.

142, 144. *Advanced Organic Laboratory*—(2, 2)

Any one or two semesters.

(Miller.)

Prerequisite—Chemistry 37, 38 or equivalent. Laboratory work devoted to more difficult organic preparations and a study of the quantitative determination of carbon, hydrogen, nitrogen and halogen in organic compounds.

146, 148. *Identification of Organic Compounds*—(2, 2)

One lecture, two laboratories.

(Miller.)

Prerequisite—Chemistry 113, 114, or equivalent. The systematic identification of organic compounds.

153. *Biological Chemistry*—(5)

Junior year, first semester, four lectures and one laboratory.

(Zenker and Konopik.)

Prerequisites—Chemistry 35, 37. Lectures and laboratory exercises devoted to the composition of living organisms and the chemical and physical processes which occur during health and in disease.

187, 189. *Physical Chemistry*—(3, 3)

Three lectures.

(Estabrook.)

Prerequisites—Chemistry 15, 35, 37, Physics 10, 11 and Mathematics 20, 21. A study of laws and theories of chemistry, including the gas laws, kinetic theory, liquids, solutions, elementary thermodynamics, thermo-chemistry, equilibrium, chemical kinetics and electro-chemistry.

188, 190. *Physical Chemistry*—(2, 2)

Two laboratories.

(Estabrook.)

Prerequisites—Chemistry 187, 189 or may be taken simultaneously with Chemistry 187, 189. Quantitative experiments are performed which demonstrate physio-chemical principles, and acquaint the student with precision apparatus.

For Graduates

Chemistry 141, 143, or its equivalent is a prerequisite for any of the following courses, except Chemistry 230.

230. *Seminar*—(1)

Each semester.

Required of students majoring in pharmaceutical chemistry. Reports of progress and survey of recent developments in chemistry.

240. *Stereochemistry*—(2)

Two lectures.

(Miller.)

A study of the principles of stereochemistry of organic compounds.

242. *Heterocyclic Chemistry*—(2)

Two lectures.

(Doorenbos.)

A study of the chemistry and synthesis of heterocyclic compounds.

250. *Steroids*—(2)

Two lectures.

(Doorenbos.)

A study of the synthesis and structure determination of steroids and the application of modern chemical concepts to the chemistry of steroids.

252. *Alkaloids*—(2)

Two lectures.

(Miller.)

A study of the principles involved in structure determination, chemistry and synthesis of the major alkaloid classes.

255. *Instrumental Analysis*—(2)

Either semester, two laboratories.

(Doorenbos and Miller).

Prerequisite—Chemistry 187, 188, 189, 190 or equivalent.

399. *Research in Pharmaceutical Chemistry*

Credit determined by the amount and quality of work performed.

ENGLISH

*1, 2. *Survey and Composition*—(3, 3)

Freshman year, three lectures.

Prerequisite—Four units of high school English. A study of style, syntax, spelling and punctuation, combined with a historical study of English and American literature of the nineteenth and twentieth centuries. Written themes, book reviews and exercises.

3, 4. *Composition and World Literature*—(3, 3)

Elective, three lectures.

(Ballman.)

Prerequisite—English 1, 2. Practice in composition. An introduction to world literature, foreign classics being read in translation.

SPEECH

*1, 2. *Public Speaking*—(1, 1)

Freshman year, one lecture.

The preparation and delivery of short original speeches; outside readings; reports, etc.

FIRST AID

1. *Standard First Aid Course*

Senior year, first semester, one lecture, one demonstration. Mr. Gregson, instructor from the Baltimore Chapter of the American Red Cross.

MATHEMATICS

*0. *Basic Mathematics*—(0)

Freshman year, first semester, three lectures.

Required of students whose curriculum calls for Math 10 and who fail the qualifying examination for this course. The fundamental principles of algebra.

*Course, formerly given by the College of Arts and Sciences, no longer offered at Baltimore.

***10. Algebra—(3)**

Freshman year, first and second semesters, three lectures.

Prerequisite—one unit of algebra. Fundamental operations, factoring, fractions, linear equations, exponents and radicals, logarithms, quadratic equations, variation, binomial theorem, and theory of equations.

***11. Trigonometry and Analytic Geometry—(3)**

Freshman year, second semester, three lectures.

Prerequisite—Mathematics 10 or 15. Required of those students who do not offer one-half unit of trigonometry. Trigonometric functions, identities, the radian and mil, graphs, addition formulas, solution of triangles, coordinates, locus problems, the straight line and circle, conic sections and graphs.

***15. College Algebra—(3)**

Freshman year, first semester, three lectures.

Prerequisite—High school algebra completed. Fundamental operations, variation, functions and graphs, quadratic equations, theory of equation, binomial theorem, complex numbers, logarithms, determinants and progressions.

***17. Analytic Geometry—(3)**

Freshman year, second semester, three lectures.

Prerequisite—High school trigonometry and Mathematics 15. Coordinates, locus problems, the straight line and circle, graphs, transformation of coordinates, conic sections, parametric equations, transcendental equations, and solid analytic geometry.

20, 21. Calculus—(3, 3)

Three lectures.

(Miller.)

Prerequisite—Mathematics 15 and 17 and approval of instructor. Limits, derivatives, differentials, maxima and minima, curve sketching, rates, curvature, kinematics, integration, geometric and physical applications on integration, partial derivatives, space geometry, multiple integrals, infinite series and differential equations.

For Graduates and Advanced Undergraduates

Math. 130. Probability. (3)

First semester. Prerequisite, Math. 21 or equivalent. Combinatory analysis, total, compound, and inverse probability, continuous distributions, theorems of Bernoulli and Laplace, theory of errors. (Staff.)

Math. 132. Mathematical Statistics. (3)

Second semester. Prerequisite, Math. 21 or equivalent. Frequency distributions and their parameters, multivariate analysis and correlation, theory of sampling, analysis of variance, statistical inference. (Staff.)

MICROBIOLOGY

1. Pharmaceutical Microbiology—(4)

Junior year, first semester, two lectures, two laboratories.

(Shay and Becker.)

Introduction to general microbiology with special emphasis on the study of pathogenic microorganisms, including the public health aspects of the prevention and control of communicable diseases.

*Course, formerly given by the College of Arts and Sciences, no longer offered at Baltimore.

For Graduates and Advanced Undergraduates

115. Serology and Immunology—(4)

Junior year, second semester, two lectures, two laboratories. (Shay and Becker.)

Prerequisites—Microbiology 1. A study of the principles of immunity, including the preparation and use of biological products employed in the prevention and treatment of infectious diseases.

For Graduates

200, 201. Chemotherapy—(1, 1)

One lecture. (Given in alternate years.) (Shay.)

A study of the chemistry, toxicity, pharmacology and therapeutic value of drugs employed in the treatment of parasitic diseases.

202, 203. Reagents and Media—(1, 1)

One lecture. (Given in alternate years.) (Shay.)

A study of the methods of preparation and use of microbiological reagents and media.

210. Special Problems in Microbiology

A laboratory course on selected problems in microbiology. Credit determined by the amount and quality of work performed. (Shay.)

211. Public Health—(1-2)

One lecture.

Prerequisite—Microbiology 1, 115. Lectures and discussions on the organization and administration of state and municipal health departments and private health agencies. The courses will also include a study of laboratory methods.

399. Research in Microbiology

Credit determined by the amount of work performed. (Shay.)

MODERN LANGUAGES

**1, 2. Elementary French—(3, 3)*

Freshman year, three lectures.

Students who offer two units in French for entrance, but whose preparation is not adequate for second-year French, receive half credit for this course. Elements of grammar, composition, pronunciation and translation.

**1, 2. Elementary German—(3, 3)*

Freshman year, three lectures.

Students who offer two units in German for entrance, but whose preparation is not adequate for second-year German receive half credit for this course. Elements of grammar, composition, pronunciation and translation.

Students will be assigned to one of the two languages by the department. The assignment will ordinarily be made on the basis of the student's previous training.

Six semester hours College credit in Spanish will be accepted as satisfying the Modern Language requirement.

*Course, formerly given by the College of Arts and Sciences, no longer offered at Baltimore.

*6, 7. *Intermediate Scientific French*—(3, 3)

Three lectures.

Prerequisite—French 1 and 2 or equivalent. Rapid grammar review, exercises in pronunciation, reading of scientific texts.

*6, 7. *Intermediate Scientific German*—(3, 3)

Three lectures.

Prerequisite—German 1 and 2 or equivalent. Review of grammar and reading of scientific texts.

PHARMACOGNOSY

51. *Pharmacognosy, General*—(4)

Junior year, first semester, two lectures and two laboratories. (Slama and Kokoski.)

Prerequisites—Zoology 4, Chemistry 35, 36, 37, 38. A study of the cultivation, collection, and commerce of drugs of animal and vegetable origin with special emphasis on the physical, microscopical, and chemical characteristics used in their identification and in the detection of adulteration.

52. *Pharmacognosy, General*—(4)

Junior year, second semester, two lectures and two laboratories. (Slama and Kokoski.)

Prerequisites—Zoology 4; Chemistry 35, 36, 37, 38; Pharmacognosy 51. A continuation of Pharmacognosy 51 with instruction covering antibiotics, allergy-producing pollens, insecticides, fungicides, rodenticides, weedicides, etc.

61. *Pharmacognosy. Entomology for Pharmacists*—(3)

Senior year, first semester, two lectures, and one laboratory. (Slama and Kokoski.)

Prerequisites—Zoology 4; Chemistry 35, 36, 37, 38; Pharmacognosy 51, 52. A study of the principal types of pests commonly found in the household and in the industries, including several which attack farm and garden crops; their recognition, life history, habits, and methods of control.

62. *Pharmacognosy. Animal Health Products*—(3)

Senior year, second semester, three lectures. (Slama.)

Prerequisites—Zoology 4; Physiology 22; Microbiology 1, 115; Pharmacology 81. A study of the principal therapeutic agents that are used in the treatment and prevention of the more important animal diseases.

For Graduates and Advanced Undergraduates

101, 102. *Taxonomy of the Higher Plants*—(2, 2)

One lecture and one laboratory. Given in alternate years. (Slama.)

Prerequisite—Pharmacognosy 51, 52. A study of the kinds of seed plants and ferns, their classifications, and field work on local flora. Instruction will be given in the preparation of an herbarium.

111, 113. *Plant Anatomy*—(2, 2)

Two lectures a week. (Slama.)

Prerequisites—Pharmacognosy 51, 52.

*Course, formerly given by the College of Arts and Sciences, no longer offered at Baltimore.

112, 114. *Plant Anatomy*—(2, 2)

Two laboratory periods a week.

(Slama.)

Prerequisites—Pharmacognosy 51, 52, Pharmacognosy 111, 113. Laboratory work covering advanced plant anatomy with special emphasis placed on the structure of roots, stems, and leaves of vascular plants.

For Graduates

201, 202. *Advanced Study of Vegetable Powders*—(4, 4)

Two lectures and two laboratories.

(Slama.)

Prerequisites—Pharmacognosy 111, 112. A study of powdered vegetable drugs and spices from the structural and microchemical standpoints, including practice in identification and detection of adulterants. Given in alternate years.

211, 212. *Advanced Pharmacognosy*—(4, 4)

Two lectures and two laboratories.

(Slama.)

Prerequisites—Pharmacognosy 111, 112. A study of many crude drugs not ordinarily studied in other pharmacognosy courses. Special attention will be given to practical problems and to the identification and detection of adulterants.

399. *Research in Pharmacognosy*

Credit according to the amount and quality of work performed.

(Slama.)

PHARMACOLOGY

81, 82. *Pharmacology, General*—(4, 4)

Senior year, three lectures and one laboratory.

(Ichniowski, Gittinger, Finn and Heifetz.)

Prerequisite—Physiology 22, Biological Chemistry 153. A study of the pharmacology, toxicology and therapeutic uses of medicinal substances, including methods of biological assay, with special reference to the drugs and preparations of the United States Pharmacopoeia and the National Formulary.

For Graduates and Advanced Undergraduates

111. *Official Methods of Biological Assay*—(4)

Two lectures and two laboratories.

(Ichniowski and Gittinger.)

Prerequisite—Pharmacology 81, 82. A study of the methods of biological assay official in the United States Pharmacopoeia and the National Formulary.

For Graduates

201, 202. *Methods of Biological Assay*—(4, 4)

Laboratory and conferences, first and second semesters.

(Ichniowski.)

Prerequisite—Pharmacology 111. Offered in alternate years.

211, 212. *Special Studies in Pharmacodynamics*—(4, 4)

Laboratory and conferences, first and second semesters.

(Ichniowski.)

Prerequisite—Pharmacology 81 and 82 and the approval of the instructor. Offered in alternate years.

221, 222. *Special Studies in Biological Assay Methods*—(2-4), (2-4)

Credit according to the amount of work undertaken after consultation with the instructor. Conferences and laboratory work.

(Ichniowski.)

Prerequisite—Pharmacology 111, 201, 202. Special problems in the development of biological assay methods and comparative standards.

399. *Research in Pharmacology*

Properly qualified students may arrange with the instructor for credit and hours.

(Ichniowski.)

PHARMACY

**1, 2. *Pharmacy Orientation*—(1, 1)

Freshman year, one lecture.

(Levine.)

An introduction to pharmacy for the beginning student. The course will include the various subject matter that a pharmacy student will undertake as well as the opportunities in pharmacy. Guest lecturers will be invited from the various fields of pharmacy.

**21, 22. *Pharmacy, General*—(5, 5)

Sophomore year, four lectures and one laboratory. (Levine, Becker, S. and Becker, J.)

Prerequisite—Pharmacy 1, 2 or may be taken simultaneously with Pharmacy 1, 2. A study of all theory of pharmaceutical manipulations, including mathematical calculations, and the practical application of the theory to the manufacture of galenical preparations.

51, 52. *Pharmacy, Dispensing*—(4, 4)

Junior year, two lectures and two laboratories. (Shangraw, Patel and Richman)

Prerequisites—Pharmacy 21, 22. A study of the compounding and dispensing of prescriptions.

61. *History of Pharmacy*—(1)

Junior year, first semester, one lecture.

(Shangraw)

A study of the history of pharmacy from its beginning, with special emphasis on the history of American Pharmacy.

81. *Pharmacy Literature*—(2)

Senior year, first semester, two lectures.

(Levine.)

A study of important periodicals and currently published papers concerned with subjects of interest to pharmacists.

For Advanced Undergraduates and Graduates

101, 102. *Advanced Dispensing Pharmacy*—(3, 3)

Senior year, two lectures and one laboratory.

(Allen, Patel, and Cragg.)

Prerequisites—Pharmacy 21, 22, 51, 52. A study of the compounding of new medicinal ingredients and dispensing aids used in modern professional pharmacy, including the preparation of some important classes of pharmaceuticals on a commercial scale.

121. *Hospital Pharmacy Administration*—(2)

Senior year, first semester, two lectures.

(Purdum.)

A study of hospital pharmacy practice and administration.

132. *Cosmetics*—(3)

Senior year, second semester, two lectures and one laboratory. (Allen and Marlowe.)

Prerequisites—Pharmacy 21, 22, 51, 52, and 101. A study of the composition and

**Course not offered after 1960-61.

manufacture of cosmetic preparations including laboratory work in the formulation of these products.

For Graduates

201, 202. *Manufacturing Pharmacy*—(3, 3)

Three lectures. Given in alternate years.

(Shangraw.)

Prerequisites—Pharmacy 101, 102. A study of manufacturing processes, control procedures and equipment employed in the manufacture of pharmaceuticals on a commercial scale, including new drug applications and the Federal Food, Drug and Cosmetic Act.

203, 204. *Manufacturing Pharmacy*—(2, 2)

Two laboratories.

(Shangraw.)

Prerequisite 201, 202, or may be taken simultaneously with Pharmacy 201, 202. Laboratory work dealing with the preparation of useful and important pharmaceuticals in large quantities.

207, 208. *Physical Pharmacy*—(2, 2)

Two lectures a week.

(Shangraw.)

Prerequisites—Physical Chemistry 187, 188, 189, 190. A study of pharmaceutical systems utilizing the fundamentals of physical chemistry.

211, 212. *Survey of Pharmaceutical Literature*—(1, 1)

One lecture. Given in alternate years.

(Allen.)

Lectures and topics on the literature pertaining to pharmacy, with special reference to the origin and development of the works of drug standards and the pharmaceutical periodicals.

215, 216. *Product Development*—(2, 2)

Two laboratories.

(Allen.)

Prerequisites—Pharmacy 132, 201, 202, 203, 204. A study of the development of new pharmaceutical preparations and cosmetics suitable for marketing.

221, 222. *History of Pharmacy*—(2, 2)

Two lectures.

(Purdum.)

Lectures and assignments on the development of pharmacy in America and the principal countries of Europe. Given in alternate years.

230. *Pharmaceutical Seminar*—(1)

Each semester.

(Allen.)

Required of students majoring in pharmacy. Reports of progress in research and surveys of recent developments in pharmacy.

231, 232. *Special Problems in Pharmaceutical Technology*—(2, 2)

Two laboratories.

(Allen and Purdum.)

A study of technical problems in the stabilization and preservation of pharmaceuticals and the various methods of compounding special prescriptions.

399. *Research in Pharmacy*

Credit and hours to be arranged.

(Foss, Purdum, Allen, and Shangraw.)

PHARMACY ADMINISTRATION

21. *Accounting*—(2)

Senior year, first semester, one lecture and one laboratory.

(Leavitt and Marlowe.)

Prerequisite—Pharmacy Administration 37. The analysis of financial and operating

statements with a study of the fundamental principles of accounting, including practice in bookkeeping.

37. *Fundamentals of Economics*—(3)

Junior year, second semester, three lectures.

(Leavitt.)

A study of the general fundamentals of Economics—production, exchange, distribution and consumption of wealth, together with methods of financing, government and the consideration of economic systems.

62. *Jurisprudence*—(3)

Senior year, second semester, three lectures.

(Kaufman.)

Fundamentals of law of importance to pharmacists; Federal and State Laws and Regulations pertaining to the sale of drugs, narcotics, poisons, cosmetics and pharmaceutical preparations; Law of Contracts, Negotiable Instruments, Sales, Agency and Partnerships.

71. *Management*—(2)

Senior year, first semester, two lectures.

(Leavitt.)

Prerequisite—Pharmacy Administration 37. A study of the business problems arising in the operation of a retail pharmacy, including ownership organization, financing, leasing, insurance, purchasing, pricing, code marking and control of inventory.

72. *Drug Marketing*—(2)

Senior year, second semester, two lectures.

(Leavitt.)

Prerequisite—Pharmacy Administration 37. A study of marketing, marketing research, advertising, selling and salesmanship, merchandising, channels of distribution, wholesaling, retailing and personnel management.

PHYSICS

*10, 11. *General Physics*—(4, 4)

Sophomore year, three lectures, one laboratory.

(Estabrook and Hooper.)

Prerequisites—Mathematics 10, 11 or 15, 17. A study of the principles of mechanics, heat, wave motion, sound, light and electricity.

For Graduates and Advanced Undergraduates

104, 105. *Electricity and Magnetism*—(3, 3)

Two lectures, one laboratory.

(Estabrook.)

Prerequisites—Physics 10, 11 and Mathematics 20, 21. Given according to demand.

126. *Kinetic Theory of Gases*—(3)

Three lectures a week.

Prerequisites—Mathematics 21, and Physical Chemistry 189 and 190. Given according to demand.

(Estabrook.)

For Graduates

200, 201. *Introduction to Theoretical Physics*—(5, 5)

Five lectures.

(Estabrook.)

Prerequisites—Advanced standing in Physics. Given according to demand.

PHYSIOLOGY

****22. *Physiology, General*—(5)**

Sophomore year, second semester, three lectures, two laboratories.

(Costello and Becker.)

Prerequisite—Zoology 1, 4. A course in the fundamentals of human physiology, including neurophysiology, the heart and circulation, respiration, digestion, the kidney, endocrine glands, muscle physiology, structure and permeability of the plasma membrane, and metabolism.

For Graduates

243. *Cellular Physiology and Cytogenetics*—(2)

Two Lectures—First Semester.

(Costello and Layne.)

Prerequisites—Chemistry 153, Physiology 22, Consent of Instructor. The lectures will relate to the physical and chemical properties of protoplasm to the functional problems of the plasma membrane, cytoplasm, golgi apparatus, microsomes, nucleus, mitochondrial structure and their contributions to the integrated cellular activity. The physical and chemical phenomena of cell division and inheritance will be discussed.

244. *Current Problems in Cellular Physiology and Cytogenetics*—(1)

One Lecture—Second Semester.

(Costello and Layne.)

Prerequisites—Physiology 243, Consent of instructor. A continuation of Physiology 243 and designed to introduce the student to current thought processes of cellular physiology and cytogenetics. By means of lectures and assigned student discussion, current research trends in the field will be discussed in detail.

399. *Research in Physiology*

Credit determined by the amount and quality of work performed.

(Costello.)

ZOOLOGY

***1. *Zoology, General*—(4)**

Freshman year, first semester, two lectures and two laboratories.

This course deals with basic principles of animal life and uses a study of the anatomy and physiology of the vertebrates to demonstrate these principles.

***4. *Zoology, Animal Kingdom*—(3)**

Freshman year, second semester, two lectures and one laboratory.

A survey of the animal kingdom with special emphasis on parasites, insects and other forms that have special economic interrelationships with man.

Both courses in zoology are intended to be practical in nature and act as a firm foundation for later required courses.

*Course, formerly given by the College of Arts and Sciences, no longer offered at Baltimore.

**Course not offered after 1960-61.

DESCRIPTION OF COURSES
FIRST YEAR PROFESSIONAL PROGRAM
OF
FIVE YEAR CURRICULUM

Anatomy 31. Mammalian Anatomy and Histology. (4)

Two lectures and two laboratories.

A study of the gross anatomy and histology of mammalian types. The course is designed to provide an understanding of the various anatomical systems, with particular emphasis on human structures.

Chemistry 35, 37. Elementary Organic Chemistry. (2, 2)

Two lectures.

A study of the fundamentals of organic chemistry.

Chemistry 36, 38. Elementary Organic Laboratory. (2, 2)

One laboratory.

Prerequisite—Chemistry 35, 37 or concurrent registration therein. A study of the general procedures used in organic chemistry.

Pharmaceutical Chemistry 32. Pharmaceutical Testing and Assaying. (4)

Two lectures and two laboratories.

Prerequisite—Quantitative Chemistry; Chemistry 35, 36. A study of quantitative analytical methods applied to the chemical assay of crude drugs and official preparations with emphasis on instrumental methods.

Pharmacy 31. General. (4)

Three lectures and one laboratory.

Orientation, brief historical introduction into the field of pharmacy, and a theoretical consideration of physical—pharmaceutical manipulations, including mathematical calculations.

Pharmacy 32. General. (4)

Three lectures and one laboratory.

A continuation of the theory of physical—pharmaceutical manipulations to the manufacture of galenical and other preparations.

Pharmacy 33. Inorganic. (2)

Two lectures.

A study of the inorganic substances used in pharmacy with particular emphasis being placed upon the inorganic salts. This study includes physical and chemical properties, sources, preparation, uses and incompatibilities.

Pharmacy 35. Professional Communications. (3)

Three lectures.

Pharmacy literature and expression. A survey of the literature of pharmacy, bibliographical methods, oral and written reports on subjects of pharmaceutical interest. The use of audio-visual aids.

Pharmacy 38. History of Pharmacy. (3)

Three lectures.

A survey of the history of pharmacy and the allied sciences, with emphasis on those aspects of science most pertinent to the interests of the pharmacist. Research papers and reports required.

Pharmacy Administration 36. Accounting. (3)

Two lectures, one laboratory.

The analysis of financial and operating statements, especially as it concerns retail drug stores and other drug establishments, with a study of the fundamental principles of accounting, including practice in bookkeeping.

ROLL OF STUDENTS, SESSION 1960-61

Graduate Students†

*Becker, Earl F., Jr.	Maryland
Becker, John W.	Maryland
Becker, Stanley L.	Maryland
Beech, John A.	England
Block, Ronald Lee	District of Columbia
*Brown, Harry James	Maryland
Darago, Lillian L.	Maryland
*Darling, Macy Martin	Maryland
Dorn Conrad P., Jr.	Maryland
Finn, William J.	New York
Fishbein, William N.	Maryland
Foley, John M.	Maryland
Fox, Chester D.	New York
Fried, Irving M.	Pennsylvania
Havranek, Robert	New York
Hockley, Laura	Maryland
*Jurf, Amin N.	Syria
Kilchenstein, Michael W.	Maryland
Kokoski, Robert J.	Maryland
Konopik, Barbara H.	Maryland
Kopcho, Michael J.	New Jersey
Lesko, Stephen A., Jr.	Pennsylvania
Levine, Phillip J.	Rhode Island
Lo, Marcela Sy	Philippines
Marlowe, Edward	New York
McMillion, Cecil R.	West Virginia
Nakagawa, Masako	Japan
*O'Brien, Estele L.	Cuba
Patel, Nagindas K.	India
Patel, Vithalbhai C.	India
Pfeiffer, Curtis B.	Maryland
Prouty, Richard W.	Alabama
*Qadir, Chaudhri G.	India
Reier, George E.	Maryland
*Richman, Morton D.	Maryland
Sacks, Sylvan L.	Maryland
Schatanoff, David	Pennsylvania
Schmukler, Morton	Maryland
Shroff, Arvin P.	India
*Tamorria, C. Richard	District of Columbia
Thomas, George H.	Ohio
Thomason, Melvin R.	Colorado
Tocci, Paul M.	New York
Wang, Theodore H. T.	China
Warfield, Albert H.	Maryland
Warthen, John D., Jr.	Maryland
Zeledon, Alvaro F.	Costa Rica

†Registered in Graduate School

*First Semester Only

**Second Semester Only

Senior Class

Amass, Arnold L.	Maryland
Block, Lawrence Y.	Maryland
Bozman, Kenneth B.	Maryland
*Contrino, Gabriel M.	Maryland
Cwynar, Frank	Maryland
Diamond, Louis	Maryland
DiPaula, Vincent R.	Maryland
Evert, Helen E.	Maryland
Gordon, Gerald S.	Maryland
Greenblatt, Elliott	Maryland
Grossblatt, Norton J.	Maryland
Hamet, Harry	Maryland
Heinrich, William J.	Maryland
Huber, George H.	Maryland
Kushnick, Marvin S.	Maryland
Lee, June Eng	Maryland
Lerner, Beryl	Maryland
Levin, David G.	Maryland
Maschas, Constantine N.	Maryland
McKenna, Richard S.	Maryland
McNeill, Douglas W.	Maryland
Reisenweber, Harvey D.	Maryland
Robinson, Zoe C.	Maryland
Sappe, Nancy C.	Maryland
Silen, Irvin	Maryland
Sopher, Martin J.	Maryland
Stank, Janice P.	Maryland
Stiekman, Robert Benjamin	Maryland
Stime, Peyton O.	Maryland
Struntz, James P.	Maryland
Tabak, William	Maryland
Tamberino, Frank J.	Maryland
Tinelli, Vito, Jr.	Maryland
Walkling, Walter D.	Maryland
Wankel, Richard A.	Maryland
Weiner, Phillip P.	Maryland
Yospa, Irvin	Maryland
Zerwitz, Warren G.	Maryland

Junior Class

Amernick, Harmond H.	Maryland
Augsburger, Larry L.	Maryland
*Barron, David	Maryland
Becker, Edward P.	Maryland
Blaustein, Arnold L.	Maryland
Block, Lawrence H.	Maryland

*First Semester Only

Junior Class (continued)

Boatman, Ernest A.	Maryland
Calas, Andre T.	Maryland
Chan, Kenneth	Maryland
Clinger, Richard G.	Pennsylvania
Gandel, Stephen J.	Maryland
Gibbon, Nancy L.	Maryland
Grubb, John E.	Maryland
Gubinsky, Louis	Maryland
Hamet, Sydney H.	Maryland
Harrison, Gordon M.	Maryland
Henderson, Robert W.	Maryland
Jablon, Paul A. M.	Maryland
***Kadish, Aaron	Maryland
Kantorow, Bennett R.	Maryland
Kantorski, Robert R.	Maryland
Katz, Albert	Maryland
Kempler, Jerold A.	Maryland
Kern, Louis R., Jr.	Maryland
Konrad, James G.	Maryland
Lauer, Stephen L.	Maryland
Levitt, Kelvin R.	Maryland
Lund, Robert E.	Maryland
Mackay, Walter Price	Maryland
Mackowiak, Frank J.	Maryland
Maggitti, Ronald F.	Maryland
Mendelsohn, James	Maryland
Newman, Jerome	Maryland
Perzynski, Paul R.	Maryland
Pfann, George A.	Maryland
Pilson, Robert M., Jr.	Maryland
Plummer, Robert M.	Maryland
Price, Chester Lee	Maryland
Pristoop, Allan S.	Maryland
Rosen, Leon	Maryland
Rosenstein, Sol	Maryland
Roth, Edward	Maryland
Samonovitch, Irwin L.	Maryland
Sandler, Charles A.	Maryland
Sermuksnis, Milda I.	Maryland
Serpick, David Y.	Maryland
Smith, Dennis B.	Maryland
Sober, Julian N.	Maryland
Sophocleus, Theodore J.	Maryland
Spak, Allen	Maryland
Sugarman, Henry	Maryland
*Turnbull, Andrew, Jr.	Maryland
Wagner, Herbert C.	Maryland
Wolff, Donald W.	Maryland
Zimmer, Reid A.	California

*First semester only

***Did not attend entire session.

Sophomore Class

Abel, Walter H.	Maryland
Abramovitz, Marjorie S.	Maryland
Antwarg, Alvin G.	Maryland
Aronson, Alan J.	Maryland
***Baker, Herman L.	Maryland
Baker, Jeanne Ann	Maryland
Banks, David E.	Maryland
Bartlebaugh, John I.	Maryland
Batt, William Henry	Maryland
Benson, Michael T.	Maryland
***Berger, Norbourne Clay	Maryland
Blake, David A.	Maryland
Blas, Sanford E.	Maryland
Brandenbaugh, Don L.	Maryland
Brownstein, Marshall P.	Maryland
Caplan, Yale H.	Maryland
Caple, Arthur N., Jr.	Maryland
Chang, Gloria	Maryland
Cohen, Michael D.	Maryland
Conrad, John W.	Maryland
Cornias, William N.	Maryland
Courpas, Anthony L.	Maryland
***Crosby, Deborah E.	District of Columbia
Dockins, James J.	Maryland
Epstein, Arthur L.	Maryland
Fader, John F., II	Maryland
Foster, Barbara A.	California
Friedel, Stuart L.	Maryland
Gamerman, Marvin I.	Maryland
Garrett, James H.	District of Columbia
Goldberg, Marvin	Maryland
*Goldman, William I.	Maryland
Heyman, Irwin A.	Maryland
Hopkins, Ronald M.	Maryland
Jacobs, Martin N.	Maryland
Keller, Thomas H., Jr.	Maryland
Kuchinsky, Victoria W.	Maryland
Levi, Henry M.	Maryland
Levin, Stephen P.	Maryland
Losinsky, Barry S.	Maryland
Luskin, Robert S.	Maryland
***Mecchia, Vilma M.	Maryland
Myers, John E.	Maryland
Neiner, Carol M.	Maryland
Pariser, Joseph	Maryland
Peterson, Julia F.	Maryland
*Popov, Metodi	Maryland
*Quick, Stephen B.	Virginia

*First Semester Only

***Did not attend entire session.

Sophomore Class (continued)

Rachanow, Gerald M.	Maryland
***Reches, Henry	Maryland
Reinke, Budne C.	Maryland
Ritchie, James R.	Maryland
Sapperstein, Alan E.	Maryland
Scholtz, Frank W.	Maryland
Schultz, Lawrence M.	Maryland
Schwartzman, Allan M.	Maryland
Shaner, Daniel S.	Maryland
Shargel, Leon D.	Maryland
Shaver, Carole F.	Maryland
Sobczak, Valentine R.	Maryland
Tristani, Ettore M.	Maryland
Ullman, Kenneth C.	Maryland
Welsh, James J.	Maryland
Wilson, John W.	Maryland
Winakur, Stuart	Maryland
Woods, Dennis S.	Maryland
Yee, Susan	Maryland

Special Students

*Fowble, Cyril	California
McCreesh, Arthur H.	Maryland
***Nollau, Elmer W.	Maryland

SCHOOL OF PHARMACY AT COLLEGE PARK

Freshman Class

Ackerman, Neil	Maryland
Adams, Patricia	Maryland
Alatzas, George	Maryland
*Biscoe, Charles F.	Maryland
*Blum, Jerold P.	Maryland
Boon, David	Maryland
Brundelre, Robert	Maryland
Burkhouse, Ronald	Maryland
Catlett, Leon	Maryland
Cavoures, James	Maryland
Charkatz, Harvey	Maryland
*Clemans, David	New York
Cohen, Larry	Maryland
*Cohen, Michael	Maryland
Csyk, Richard L.	Maryland
***Dinges, Frederick H.	Maryland
Dinsmore, Billy G.	Maryland

*First Semester Only

**Second Semester Only

***Did not attend entire session.

Freshman Class (Continued)

Dolecek, Gayle R.	District of Columbia
Drews, John T.	Maryland
Elliott, William R.	Maryland
*Fine, Norman	Maryland
Folus, Gary	Maryland
Frangakis, Mina	Maryland
Gibbs, Gary	Maryland
Glover, Wayne A.	Maryland
**Goldstein, Mark N.	Maryland
Gorrell, David J.	Maryland
Gribble, Joann	District of Columbia
Griver, Michael A.	Maryland
Heer, Roger G.	Maryland
Henderson, Robert L.	Maryland
*Hill, Walter	Maryland
Hoffman, Robert W.	Maryland
Hribar, Neal E.	Maryland
Jaskowitz, Theodore J.	Maryland
Jones, Christina M.	Maryland
Katz, Melvin	Maryland
***Kaufman, Warren J.	Maryland
Kirk, Edward W.	Maryland
**Kleiner, Harold	Maryland
Kotzin, Sheldon	Maryland
Kozak, Adrian S.	Maryland
Kroopnick, Robert B.	Maryland
Lambdin, James R.	Maryland
*Leasner, Charles F.	Maryland
*Lepore, Vincent	Maryland
Lessing, Melvin	Maryland
Libowitz, Suzanne J.	Maryland
Lindenbaum, Ronald	Maryland
*Lipman, Stanley L.	Maryland
***Long, Carol G.	Maryland
Lovera, Madeline C.	Maryland
McLaughlin, Charles J.	Maryland
Martin, Lawrence L.	Maryland
Needel, Stephen	Maryland
Needelman, Gerald L.	District of Columbia
Owens, James G.	Maryland
*Peterson, William J.	Maryland
Phillips, Janet M.	Maryland
Potler, Buddy M.	Maryland
*Psaris, Manuel N.	Maryland
Rayman, Marsha	District of Columbia
Ryon, James N.	Maryland
Santell, Fredrica A.	Maryland

*First Semester Only

**Second Semester Only

***Did not attend entire session.

Freshman Class (continued)

*Santoni, Charles M.	Maryland
Scheiner, Regina J.	Maryland
Schultz, Charles J.	Maryland
Severn, Edwin	Maryland
**Shields, Barbara	Maryland
*Smith, Paul	Maryland
Sollod, Ralph M.	Maryland
Spuras, Jenina D.	Maryland
Sterner, Thomas E.	Pennsylvania
Sugarman, Sylvan	Maryland
*Taksey, Alan	Maryland
Tannebaum, Stanley B.	Maryland
Taylor, Charles D.	Maryland
*Tillou, Joraye	Maryland
Walsh, Michael J.	Maryland
Webster, Bert H.	District of Columbia
Widdowson, Logan C.	Maryland
Williams, Cornelius B.	Maryland
Winston, Carl B.	Maryland
Wolfson, Israel	Maryland

Sophomore Class

Del Castilho, Ronald M.	Alabama
Wynn, Richard L.	Maryland

ROLL OF GRADUATES, JUNE 4, 1960

Doctor of Philosophy

Chien Li Huang	Formosa
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Master of Science

Su Chien Chen	China
Carl Louis Heifetz	Maryland
Stonewall Corput King, Jr.	Georgia
Thaddeus Paul Pruss	Maryland
Patrick William Ragozzino	Connecticut
Venkatraya B. Gopal Shenoy	India

Bachelor of Science in Pharmacy

Attison Leonard Barnes, Jr.	Maryland
Stanley H. Belford	Maryland
Jerome Alvin Berger	Maryland
Jerome Harris Clayman	Maryland
Nancy Carole Conklin	Maryland
Joseph William Davies	Maryland

*First Semester Only

**Second Semester Only

University of Maryland

Louis Joseph Friedman	Maryland
Henry Joseph Glick	Maryland
Ronald Goldner	Maryland
Martin David Grebow	Maryland
Joseph G. Handelman	Maryland
Marta Hoffman	Maryland
Leonard Horwits	Maryland
John Terence Jordan	Maryland
Fern Eugene Kenney	Maryland
Ronald Herbert Kronsberg	Maryland
Toon Lee	District of Columbia
Joseph Herman Lerner	Maryland
Irvin I. Levin	Maryland
Samuel Lichter	Maryland
Howard Manuel Minster	Maryland
Joseph Harris Morton	Maryland
Anthony Michael Palmere	Maryland
Richard Morris Pilquist	Maryland
Alfred Clair Plempel, Jr.	Maryland
Irving Jacob Raksin	Maryland
Harvey Morton Rapkin	Maryland
Theodore Lee Raschka	Maryland
Morton David Richman	Maryland
Leonard Joseph Sadowski	Maryland
Peter Paul Scali	New York
Morton Jerome Sclar	Maryland
Martin Chaim Shargel	Maryland
Allan Robert Sherr	Maryland
Bernard Erwin Sherr	Maryland
Esther Harriet Shpritz	Maryland
Larry A. Snyder	Maryland
Kenneth Edward Stank	Maryland
Elliot Sanford Tokar	Maryland
Jessie Lois Tracey	Maryland
Albert Harry Warfield	Maryland
John David Warthen, Jr.	Maryland

Honors (1959-60)

Gold Medal for General Excellence	Martin C. Shargel
William Simon Memorial Prize	M. David Richman
Andrew G. DuMez Medal	Henry J. Glick
L. S. Williams Practical Pharmacy Prize	M. David Richman
Conrad L. Wich Pharmacognosy Prize	Joseph Lerner
David Fink Memorial Prize	Ronald Goldner
Phi Beta Chapter, Phi Sigma Delta Fraternity Cup	Martin C. Shargel
Kappa Chapter, Alpha Zeta Omega Prize	Henry J. Glick
Epsilon Alumnae Chapter, Lambda Kappa Sigma Sorority Prize	Irvin I. Levin

Certificates of Honor

M. David Richman

Ronald Goldner

J. David Warthen, Jr.

Honorable Mention (Junior Class)

June Eng

Vito Tinelli, Jr.

Harvey Reisenweber

DEAN'S MEDALS FOR ACADEMIC EXCELLENCE

(1959-60)

Class of 1960

Henry J. Glick
Ronald Goldner
Joseph Lerner
Irvin Levin

Irving Raksin
M. David Richmond
Martin Shargel
Allan Sherr

Bernard Sherr
Larry Snyder
Albert Warfield
J. David Warthen, Jr.

Honorable Mention

Louis Friedman

Joseph Handelman
Leonard Sadowski

Howard Minster

Class of 1961

June Eng

William Heinrich
Walter Walkling

Vito Tinelli, Jr.

Honorable Mention

Lawrence Y. Block

Douglas McNeill
Robert Stiekman

Harvey Reisenweber

Class of 1962

Louis Gubinsky

Herbert Wagner

Honorable Mention

John Grubb
Sydney Hamet

Gordon Harrison
Paul Jablon
James Konrad

Walter Mackay
Allan Pristoop

Class of 1963

Marjorie Abramovitz
Jeanne Baker
David Banks
Marshall Brownstein

Yale Caplan
Ronald Hopkins
Stephen Levin
Gerald Rachanow

Leon Shargel
Kenneth Ullman
James Welsh

Honorable Mention

Alvin Antwarg
Sanford Blas
Don Bradenbaugh

Gloria Chang
Deborah Crosby
John Fader

Budne Reinke
John Wilson
Stuart Winakur

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—The University is the rear guard and the advance agent of society. It lives in the past, the present and the future. It is the storehouse of knowledge; it draws upon this depository to throw light upon the present; it prepares people to live and make a living in the world of today; and it should take the lead in expanding the intellectual horizons and the scientific frontiers, thus helping mankind to go forward —always toward the promise of a better tomorrow.

— From "The State and the University,"
the inaugural address of
President Wilson H. Elkins,
January 20, 1955,
College Park, Maryland.

THE
UNIVERSITY of MARYLAND
BULLETIN

School of Pharmacy



1962 - 1963

The provisions of this publication are not to be regarded as an irrevocable contract between the student and the University of Maryland. The University reserves the right to change any provision or requirement at any time within the student's term of residence. The University further reserves the right at any time, to ask a student to withdraw when it considers such action to be in the best interests of the University.

Catalog and
119th Announcement

The School of Pharmacy

(Maryland College of Pharmacy, 1841 to 1904)

1962-1963



VOLUME 42, NUMBER 1
School of Pharmacy
636 West Lombard Street
Baltimore 1, Maryland

This catalog includes information applying to the terminal year of the Four Year Program in Baltimore as well as the new Five Year Program which was mandatory in September 1960.

1962

1963

JANUARY 1962							JULY 1962						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
	1	2	3	4	5	6	1	2	3	4	5	6	7
7	8	9	10	11	12	13	8	9	10	11	12	13	14
14	15	16	17	18	19	20	15	16	17	18	19	20	21
21	22	23	24	25	26	27	22	23	24	25	26	27	28
28	29	30	31				29	30	31				

FEBRUARY							AUGUST						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
				1	2	3					1	2	3
4	5	6	7	8	9	10	5	6	7	8	9	10	11
11	12	13	14	15	16	17	12	13	14	15	16	17	18
18	19	20	21	22	23	24	19	20	21	22	23	24	25
18	19	20	21	22	23	24	26	27	28	29	30	31	
25	26	27	28										

MARCH							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
				1	2	3							1
4	5	6	7	8	9	10	2	3	4	5	6	7	8
11	12	13	14	15	16	17	9	10	11	12	13	14	15
18	19	20	21	22	23	24	16	17	18	19	20	21	22
25	26	27	28	29	30	31	23	24	25	26	27	28	29
							30						

APRIL							OCTOBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	1	2	3	4	5	6	
8	9	10	11	12	13	14	7	8	9	10	11	12	13
15	16	17	18	19	20	21	14	15	16	17	18	19	20
22	23	24	25	26	27	28	21	22	23	24	25	26	27
29	30						28	29	30	31			

MAY							NOVEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
				1	2	3						1	2
6	7	8	9	10	11	12	4	5	6	7	8	9	10
13	14	15	16	17	18	19	11	12	13	14	15	16	17
20	21	22	23	24	25	26	18	19	20	21	22	23	24
27	28	29	30	31			25	26	27	28	29	30	

JUNE							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
					1	2							1
3	4	5	6	7	8	9	2	3	4	5	6	7	8
10	11	12	13	14	15	16	9	10	11	12	13	14	15
17	18	19	20	21	22	23	16	17	18	19	20	21	22
24	25	26	27	28	29	30	23	24	25	26	27	28	29
							30	31					

JANUARY 1963							JULY 1963						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
	1	2	3	4	5			1	2	3	4	5	6
6	7	8	9	10	11	12	7	8	9	10	11	12	13
13	14	15	16	17	18	19	14	15	16	17	18	19	20
20	21	22	23	24	25	26	21	22	23	24	25	26	27
27	28	29	30	31			28	29	30	31			

FEBRUARY							AUGUST						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
					1	2						1	2
3	4	5	6	7	8	9	4	5	6	7	8	9	10
10	11	12	13	14	15	16	11	12	13	14	15	16	17
17	18	19	20	21	22	23	18	19	20	21	22	23	24
24	25	26	27	28			25	26	27	28	29	30	31

MARCH							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
					1	2						1	2
3	4	5	6	7	8	9	8	9	10	11	12	13	14
10	11	12	13	14	15	16	15	16	17	18	19	20	21
17	18	19	20	21	22	23	22	23	24	25	26	27	28
24	25	26	27	28	29	30	29	30					
31													

APRIL							OCTOBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
	1	2	3	4	5	6					1	2	3
7	8	9	10	11	12	13	6	7	8	9	10	11	12
14	15	16	17	18	19	20	13	14	15	16	17	18	19
21	22	23	24	25	26	27	20	21	22	23	24	25	26
28	29	30					27	28	29	30	31		

MAY							NOVEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
				1	2	3						1	2
5	6	7	8	9	10	11	3	4	5	6	7	8	9
12	13	14	15	16	17	18	10	11	12	13	14	15	16
19	20	21	22	23	24	25	17	18	19	20	21	22	23
26	27	28	29	30	31		24	25	26	27	28	29	30
							31						

JUNE							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
					1						1	2	3
2	3	4	5	6	7	8	7	8	9	10	11	12	13
9	10	11	12	13	14	15	14	15	16	17	18	19	20
16	17	18	19	20	21	22	21	22	23	24	25	26	27
23	24	25	26	27	28	29	28	29	30	31			
30													

ACADEMIC CALENDAR

1962-1963

First Semester

1962

September 17	Monday	Senior (Four Year Program) Registration— 9:00-10:00 a.m. First Year (Professional Program) and Second Year (Professional Program)— Registration—10:30-11:30 a.m. Orientation for New Students—2:00 p.m.
September 18	Tuesday	Graduate Registration—9:00-11:30 a.m.
September 24	Monday	Instruction begins with first scheduled period
November 21	Wednesday	Thanksgiving recess begins at close of last scheduled period
November 26	Monday	Instruction resumes with first scheduled period
December 21	Friday	Christmas recess begins at close of last scheduled period

1963

January 3	Thursday	Instruction resumes with first scheduled period
January 23-29	Wed.-Tues.	First semester examinations

Second Semester

February 5	Tuesday	Graduate Registration—9:00-11:30 a.m.
February 6	Wednesday	First Year (Professional Program)— Registration—9:00-10:00 a.m. Second Year (Professional Program) and Senior (Four Year Program)— Registration—10:30-11:30 a.m.
February 11	Monday	Instruction begins with first scheduled period
February 22	Friday	Washington's Birthday, Holiday
April 11	Thursday	Easter recess begins at close of last scheduled period
April 16	Tuesday	Instruction resumes with first scheduled period
May 20-24	Mon.-Fri.	Senior final examinations
May 24-31	Fri.-Fri.	Second semester examinations
May 30	Thursday	Memorial Day, Holiday
June 8	Saturday	Commencement

All students are expected to complete their registration, including the payment of bills and filing of class cards, on the regular registration day. Students failing to comply with this regulation are charged a fee of five dollars. No student is normally permitted to register after Saturday noon of the week in which instruction begins.

The offices of the Registrar and Cashier are open daily, Monday through Friday, from 9:00 a.m. to 4:00 p.m.

CORRESPONDENCE

All correspondence prior to entrance to the Senior year of the Four Year Program in the School of Pharmacy should be addressed to the Director of Admissions, University of Maryland, Building 520R, Room 201, Lombard and Greene Streets, Baltimore 1, Md.

All correspondence prior to entrance in the Pre-professional Program of the Five Year Curriculum should be addressed to the Director of Admissions, University of Maryland, College Park, Md.

All correspondence relative to entrance in the Professional Program of the Five Year Curriculum should be addressed to the Director of Admissions, University of Maryland, Building 520R, Room 201, Lombard and Greene Streets, Baltimore 1, Maryland.

Correspondence relating to the following topics should be addressed to the respective departments in care of the School of Pharmacy, 636 West Lombard Street, Baltimore 1, Maryland:

Alumni Affairs, Business Matters, Catalogs and Brochures,
General Matters, Gifts and Bequests, Public Relations,
Housing of Students (Baltimore), Scholarships (Baltimore),
Scholastic Standing of Students (Baltimore), Transcripts of
Records (Baltimore), Vocational Placement.

VISITORS

Visitors are welcome at the School of Pharmacy in Baltimore. The Dean's office is open Monday through Friday from 9 a.m. to 5 p.m. and on Saturday by appointment.

BOARD OF REGENTS
and
MARYLAND STATE BOARD OF AGRICULTURE

	<i>Term Expires</i>
CHARLES P. MCCORMICK <i>Chairman</i> ----- McCormick and Company, 414 Light Street, Baltimore 2	1966
EDWARD F. HOLTER <i>Vice-Chairman</i> ----- Farmers Home Administration, 103 South Gay Street, Baltimore 2	1968
B. HERBERT BROWN <i>Secretary</i> ----- The Baltimore Institute, 10 West Chase Street, Baltimore 1	1967
HARRY H. NUTTLE <i>Treasurer</i> ----- Denton	1966
LOUIS L. KAPLAN <i>Assistant Secretary</i> ----- 5800 Park Heights Avenue, Baltimore 15	1964
C. E. TUTTLE <i>Assistant Treasurer</i> ----- 907 Latrobe Building, Charles and Read Streets, Baltimore 2	1962
RICHARD W. CASE ----- Commercial Credit Building, Baltimore	1970
THOMAS W. PANGBORN ----- The Pangborn Corporation, Pangborn Blvd., Hagerstown	1965
THOMAS B. SYMONS ----- Suburban Trust Company, 6950 Carroll Avenue, Takoma Park	1963
WILLIAM C. WALSH ----- Liberty Trust Building, Cumberland	1968
MRS. JOHN L. WHITEHURST ----- 4101 Greenway, Baltimore 18	1967

Members of the Board are appointed by the Governor of the State for terms of seven years each, beginning the first Monday in June. Members may serve only two consecutive terms.

The President of the University of Maryland is, by law, executive Officer of the Board.

The State law provides that the Board of Regents of the University of Maryland shall constitute the Maryland State Board of Agriculture.

OFFICERS OF ADMINISTRATION

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WILSON H. ELKINS, *President*

B.A., University of Texas, 1932; M.A., 1932; B.LITT., Oxford University, 1936; D. PHIL., 1936.

ALBIN O. KUHN, *Executive Vice President*

B.S., University of Maryland, 1938; M.S., 1939; PH.D., 1948.

R. LEE HORNBAKE, *Vice President for Academic Affairs*

B.S., California State College, California, Pa., 1934; M.A., Ohio State University, 1936; PH.D., 1942.

FRANK L. BENTZ, JR., *Assistant to the President*

B.S., University of Maryland, 1942; PH.D., 1952.

ALVIN E. CORMENY, *Assistant to the President, in Charge of Endowment and Development*

B.A., Illinois College, 1933; LL.B., Cornell University, 1936.

Emeriti

HARRY C. BYRD, *President Emeritus*

B.S., University of Maryland, 1908; LL.D., Washington College, 1936; LL.D., Dickinson College, 1938; D.SC., Western Maryland College, 1938.

J. FREEMAN PYLE, *Dean of the College of Business and Public Administration Emeritus*

PH.B., University of Chicago, 1917; M.A., 1918; PH.D., 1925.

ADELE H. STAMP, *Dean of Women Emerita*

B.A., Tulane University, 1921; M.A., University of Maryland, 1924.

Administrative Officers of the Schools and Colleges

MYRON S. AISENBERG, *Dean of the School of Dentistry*

D.D.S., University of Maryland, 1922.

VERNON E. ANDERSON, *Dean of the College of Education*

B.S., University of Minnesota, 1930; M.A., 1936; PH.D., University of Colorado, 1942.

RONALD BAMFORD, *Dean of the Graduate School*

B.S., University of Connecticut, 1924; M.S., University of Vermont, 1926; PH.D., Columbia University, 1931.

CORDON M. CAIRNS, *Dean of Agriculture*

B.S., Cornell University, 1936; M.S., 1938; PH.D., 1940.

RAY W. EHRENSBERGER, *Dean of University College*

B.A., Wabash College, 1929; M.A., Butler University, 1930; PH.D., Syracuse University, 1937.

NOEL E. FOSS, *Dean of the School of Pharmacy*

PH.C., South Dakota State College, 1929; B.S., 1929; M.S., University of Maryland, 1932; PH.D., 1933.

School of Pharmacy

- LESTER M. FRALEY, *Dean of the College of Physical Education, Recreation and Health*
B.A., Randolph-Macon College, 1928; M.A., 1937; PH.D., Peabody College, 1939.
- FLORENCE M. GIPE, *Dean of the School of Nursing*
B.S., Catholic University of America, 1937; M.S., University of Pennsylvania, 1940;
ED.D., University of Maryland, 1952.
- LADISLAUS F. GRAPSKI, *Director of the University Hospital*
R.N., Mills School of Nursing, Bellevue Hospital, New York, 1938; B.S., University of
Denver, 1942; M.B.A., in Hospital Administration, University of Chicago, 1943.
- IRVIN C. HAUT, *Director, Agriculture Experiment Station and Head, Department of
Horticulture*
B.S., University of Idaho, 1928; M.S., State College of Washington, 1930; PH.D., Uni-
versity of Maryland, 1933.
- ROGER HOWELL, *Dean of the School of Law*
B.A., Johns Hopkins University, 1914; PH.D., 1917; LL.B., University of Maryland, 1917.
- VERL S. LEWIS, *Dean of the School of Social Work*
A.B., Huron College, 1933; M.A., University of Chicago, 1939; D.S.W., Western Reserve
University, 1954.
- SELMA F. LIPPEATT, *Dean of the College of Home Economics*
B.S., Arkansas State Teachers College, 1938; M.S., University of Tennessee, 1945; PH.D.,
Pennsylvania State University, 1953.
- FREDERIC T. MAVIS, *Dean of the College of Engineering*
B.S., University of Illinois, 1922; M.S., 1926; C.E., 1932; PH.D., 1935.
- PAUL E. NYSTROM, *Director, Agricultural Extension Service*
B.S., University of California, 1928; M.S., University of Maryland, 1931; M.P.A., Harvard
University, 1948; D.P.A., 1951.
- DONALD W. O'CONNELL, *Dean of the College of Business and Public Administration¹*
B.A., Columbia University, 1937; M.A., 1938; PH.D., 1953.
- JAMES H. REID, *Assistant Dean of the College of Business and Public Administration²*
B.S., University of Iowa, 1923; M.A., American University, 1933.
- LEON P. SMITH, *Dean of the College of Arts and Sciences*
B.A., Emory University, 1919; M.A., University of Chicago, 1928; PH.D., 1930; Diplome
de l'Institut de Touraine, 1932.
- WILLIAM S. STONE, *Dean of the School of Medicine and Director of Medical Education
and Research*
B.S., University of Idaho, 1924; M.S., 1925; M.D., University of Louisville, 1929;
PH.D. (HON.), University of Louisville, 1946.

General Administrative Officers

- G. WATSON ALGIRE, *Director of Admissions and Registrations*
B.A., University of Maryland, 1930; M.S., 1931.

¹Appointment effective February 1, 1962.

²Acting Dean, July 1, 1961—February 1, 1962.

University of Maryland

THEODORE R. AYLESWORTH, *Professor of Air Science and Head, Department of Air Science*
B.S., Mansfield State Teachers College, 1936; M.S., University of Pennsylvania, 1949.

B. JAMES BORRESON, *Executive Dean for Student Life*
B.A., University of Minnesota, 1944.

DAVID L. BRIGHAM, *Director of Alumni Relations*
B.A., University of Maryland, 1938.

C. WILBUR, CISSEL, *Director of Finance and Business*
B.A., University of Maryland, 1932; M.A., 1934; C.P.A., 1939.

HELEN E. CLARKE, *Dean of Women*
B.S., University of Michigan, 1943; M.A., University of Illinois, 1951; ED.D., Teachers College, Columbia, 1960.

WILLIAM W. COBEY, *Director of Athletics*
A.B., University of Maryland, 1930.

L. EUGENE CRONIN, *Director of Natural Resources Institute*
A.B., Western Maryland College, 1938; M.S., University of Maryland, 1943; PH.D., 1946.

LESTER M. DYKE, *Director of Student Health Service*
B.S., University of Iowa, 1936; M.D., 1926.

GEARY F. EPPLEY, *Dean of Men*
B.S., Maryland State College, 1920; M.S., University of Maryland, 1926.

HARRY D. FISHER, *Comptroller and Budget Officer*
B.S., University of Maryland, 1943; C.P.A., 1948.

GEORGE W. FOGG, *Director of Personnel*
B.A., University of Maryland, 1926; M.A., 1928.

ROBERT J. MC CARTNEY, *Director of University Relations*
B.A., University of Massachusetts, 1941.

GEORGE W. MORRISON, *Associate Director and Supervising Engineer Physical Plant (Baltimore)*
B.S., University of Maryland, 1927; E.E., 1931.

HOWARD ROVELSTAD, *Director of Libraries*
B.A., University of Illinois, 1936; M.A., 1937; B.S.L.S., Columbia University, 1940.

ORVAL L. ULRY, *Director of the Summer Session*
B.S., Ohio State University, 1938; M.A., 1944; PH.D., 1953.

GEORGE O. WEBER, *Director and Supervising Engineer, Department of Physical Plant*
B.S., University of Maryland, 1933.

Division Chairmen

JOHN E. FABER, JR., *Chairman of the Division of Biological Sciences*
B.S., University of Maryland, 1926; M.S., 1927; PH.D., 1937.

HAROLD C. HOFFSOMMER, *Chairman of the Division of Social Sciences*
B.S., Northwestern University, 1921; M.A., 1923; PH.D., Cornell University, 1929.

CHARLES E. WHITE, *Chairman of the Lower Division*
B.S., University of Maryland, 1923; M.S., 1924; PH.D., 1926.

CHAIRMEN, STANDING COMMITTEES, FACULTY SENATE

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Augustus J. Pahl (Graduate School), *Chairman*

University of Maryland

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**ADJUNCT COMMITTEE OF THE GENERAL COMMITTEE ON STUDENT
LIFE AND WELFARE**

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Warren L. Strausbaugh (Arts and Sciences), *Chairman*

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Redfield Allen (Engineering), *Chairman*

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J. Allan Cook (Business and Public Administration), *Chairman*

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FRANCIS M. MILLER
DONALD E. SHAY

FRANK J. SLAMA
CASIMIR T. ICHNIOWSKI, *Secretary*

Faculty (1961-1962)

Emerita

B. OLIVE COLE, *Professor Emerita of Pharmacy Administration*
PHAR.D., University of Maryland, 1913; LL.B., 1923.

Professors

NOEL E. FOSS, *Professor of Pharmacy*
PH.C., South Dakota State College, 1929; B.S. IN PHARM., 1929; M.S., University of Maryland, 1932; PH.D., 1933.
Registered Pharmacist—South Dakota, New York, Maryland.

CASIMIR T. ICHNIOWSKI, *Emerson Professor of Pharmacology*
PH.C., University of Maryland, 1929; B.S. IN PHARM., 1930; M.S., 1932; PH.D., 1936.
Registered Pharmacist—Maryland

FRANCIS M. MILLER, *Professor of Pharmaceutical Chemistry*
B.S., Western Kentucky State College, 1946; PH.D., Northwestern University, 1949.

†W. ARTHUR PURDUM, *Professor of Hospital Pharmacy*
PH.C., University of Maryland; 1930; B.S. IN PHARM., 1932; M.S., 1934; PH.D., 1941.
Registered Pharmacist—Maryland.

DONALD E. SHAY, *Professor of Microbiology*
B.S., Lebanon Valley College, 1937; M.S., University of Maryland, 1938; PH.D., 1943.

FRANK J. SLAMA, *Professor of Pharmacognosy*
PH.G., University of Maryland, 1924; PH.C., 1925; B.S. IN PHARM., 1928; M.S., 1930; PH.D., 1935.
Registered Pharmacist—Maryland.

Associate Professors

BENJAMIN FRANK ALLEN, *Associate Professor of Pharmacy*
B.S. IN PHARM., University of Maryland, 1937; PH.D., 1949.
Registered Pharmacist—Maryland.

LESLIE C. COSTELLO, *Associate Professor of Anatomy and Physiology*
B.S., University of Maryland, 1952; M.S., 1954; PH.D., 1957.

NORMAN J. DOORENBOS, *Associate Professor of Pharmaceutical Chemistry*
B.S. IN CHEM., University of Michigan, 1950; M.S., 1951; PH.D., 1953.

IDA MARIAN ROBINSON, *Associate Professor of Library Science*
A.B., Cornell University, 1924; B.S.L.S., Columbia University School of Library Science, 1944.

† Part time.

University of Maryland

Assistant Professors

- †ADELE B. BALLMAN, *Assistant Professor of English*
A.B., Goucher College, 1926; PH.D., The Johns Hopkins University, 1935.
- HILDA E. MOORE, *Assistant Professor of Library Science*
A.B., Randolph-Macon Woman's College, 1936; A.B.L.S., Emory University Library School, 1937.
- †ERNST F. C. KLESER, *Assistant Professor of Pharmaceutical Chemistry*
DIPLOM-CHEMIKER, University of Hamburg (Germany), 1951; DR. RER. NAT., 1954.
- RALPH F. SHANGRAW, *Assistant Professor of Pharmacy*
B.S. IN PHARM., Massachusetts College of Pharmacy, 1952; M.S., 1954; PH.D., University of Michigan, 1959.
Registered Pharmacist—Vermont, Massachusetts.
- NICOLAS ZENKER, *Assistant Professor of Pharmaceutical Chemistry*
CD. SC. CH., University of Louvain (Belgium), 1948; M.A., University of California, 1953; PH.D., 1958.

Instructors

- EARL F. BECKER, JR., *Instructor in Microbiology*
B.S., Muhlenberg College, 1951; M.S., George Washington University, 1957.
- §GEORGIANNA S. GITTINGER, *Instructor in Pharmacology*
A.B., Hood College, 1912; M.A., University of Virginia, 1924.
- ROBERT J. KOKOSKI, *Instructor in Pharmacognosy*
B.S. IN PHARM., University of Maryland, 1952; M.S., 1956.
Registered Pharmacist—Maryland.
- DEAN E. LEAVITT, *Instructor in Pharmacy Administration*
B.S. IN PHARM., University of Maryland, 1954; M.S., 1957.
Registered Pharmacist—Maryland.
- PHILLIP J. LEVINE, *Instructor in Pharmacy*
B.S., Rhode Island College of Pharmacy, 1955; M.S., University of Maryland, 1957.
Registered Pharmacist—Maryland, Rhode Island.

Lecturers

- †RICHARD D. DEAN, *Lecturer in Mathematics*
B.S., University of Maryland, 1950; M.ED., The Johns Hopkins University, 1954.
- JOSEPH S. KAUFMAN, *Lecturer in Pharmacy Administration*
B.A., University of Maryland, 1950; LL.B., University of Maryland, 1953.

Visiting Lecturers

- SAMUEL L. FOX, *Visiting Lecturer in Physiology*
PH.G., University of Maryland, 1934; B.S. IN PHARM., 1936; M.D., 1938.
- ENNIS C. LAYNE, JR., *Visiting Lecturer in Physiology*
B.S., George Washington University, 1950; M.S., 1953; PH.D., 1955.

† Part time.

§ Retired July 31, 1961.

‡ Resigned June 30, 1962.

Research Associate

MU-TSU WU, *Research Associate in Chemistry*

B.S. IN CHEMISTRY, 1951, National Taiwan University; D.S.C., Tohoku University, Japan, 1961.

Fellows

LANDON W. BURBAGE, *Bristol-Myers Fellow in Pharmacy Administration (Research)*
PH.B., Medical College of Virginia, 1909; PH.G., 1910.

*JOHN W. BECKER, *S. B. Penick & Co. Fellow in Pharmacy*

B.S. IN PHARM., University of Maryland, 1959.

Registered Pharmacist—Maryland.

CONRAD P. DORN, JR., *U. S. Public Health Service Fellow in Chemistry*

B.S. IN PHARM., University of Maryland, 1958; M.S., 1961.

IRVING M. FRIED, *U. S. Public Health Service Fellow in Chemistry*

B.S., IN PHARM., Temple University, 1958; M.S., 1960.

Registered Pharmacist—Pennsylvania.

ROBERT E. HAVRANEK, *U. S. Public Health Service Fellow in Chemistry*

B.S. IN PHARM., Columbia University, 1956; M.S., University of Maryland, 1959.

Registered Pharmacist—California, Maryland, New York, Florida.

†HATIF H. JALIL, *Postdoctorate Fellow in Chemistry (National Institute of Mental Health)*

PH.CH., Royal College of Pharmacy and Chemistry, Iraq, 1952; M.S., University of Maryland, 1955; PH.D., 1957.

BARBARA H. KONOPIK, *Research Fellow in Chemistry (National Institute of Mental Health)*

A.B., Mt. St. Agnes College, 1957.

‡CHARLES S. KUMKUMIAN, *U. S. Public Health Service Fellow in Chemistry*

B.S., Temple University, 1944; M.S., 1951.

Registered Pharmacist—Maryland, Pennsylvania.

EDWARD MARLOWE, *American Foundation for Pharmaceutical Education Fellow*

B.S. IN PHARM., Columbia University, 1956; M.S., 1958.

Registered Pharmacist—New York, Maryland.

LEON MILEWICH, *Postdoctorate Fellow in Chemistry (Smith, Kline and French Laboratories)*

B.S., University of Buenos Aires, Argentina, 1956; M.S., 1958; PH.D., 1959.

MASAKO NAKAGAWA, *Research Fellow in Chemistry (National Cancer Institute)*

B.S., Hokkaido University, Japan, 1958; M.S., 1960.

VITHALBHAI C. PATEL, *Research Fellow in Chemistry (National Cancer Institute)*

B.PHARM., L. M. College of Pharmacy, Gujarat University, India, 1956; M.S., University of Maryland, 1959.

§GEORGE E. REIER, *Noxzema Foundation Fellow in Pharmacy*

B.S. IN PHARM., University of Maryland, 1958; M.S., 1961.

Registered Pharmacist—Maryland.

† Effective March 11, 1962; Resigned June 30, 1962.

‡ Resigned September 9, 1961.

§ Resigned December 18, 1961 to accept Graduate Assistantship.

* Effective May 7, 1962; Resigned June 16, 1962.

University of Maryland

¹ARVIN P. SHROFF, *Research Fellow in Chemistry (Sterling Winthrop, National Institute of Mental Health)*

B.S., M. S. University, Baroda, India, 1954; M.S., Duquesne University, 1958.

THEODORE H. T. WANG, *Research Fellow in Chemistry (National Institute of Mental Health)*

B.S., Mukden Medical College, China, 1949; M.S., University of Nebraska, 1958.

ALBERT H. WARFIELD, *The H. A. B. Dunning Research Fellow in Chemistry*

B.S., IN PHARM., University of Maryland, 1960.

Registered Pharmacist—Maryland.

JOHN D. WARTHEN, JR., *U. S. Public Health Service Fellow in Chemistry*

B.S., IN PHARM., University of Maryland, 1960.

Registered Pharmacist—Maryland.

Graduate Assistants

²STANLEY L. BECKER, *Assistant in Pharmacy*

B.S., IN PHARM., University of Maryland, 1959.

Registered Pharmacist—Maryland.

PAUL C. BOSSLE, *Assistant in Chemistry*

B.S., IN PHARM., Loyola University, Louisiana, 1961.

Registered Pharmacist—Louisiana.

LOUIS DIAMOND, *Assistant in Pharmacology*

B.S., IN PHARM., University of Maryland, 1961; Registered Pharmacist—Maryland.

³GERALD S. GORDON, *Assistant in Pharmacy*

B.S., IN PHARM., University of Maryland, 1961.

Registered Pharmacist—Maryland.

CARL L. HEIFETZ, *Assistant in Pharmacology*

B.S., IN PHARM., University of Maryland, 1957; M.S., 1960.

Registered Pharmacist—Maryland, District of Columbia.

⁴STANLEY A. KOCH, *Assistant in Chemistry*

B.S., IN PHARM., George Washington University, 1956.

⁵MARION I. MANION, *Assistant in Chemistry*

B.S., IN PHARM., Centro Escolar University, Manila, P. I., 1953.

*GEORGE E. REIER, *Assistant in Pharmacy*

B.S., IN PHARM., University of Maryland, 1958; M.S., 1961.

Registered Pharmacist—Maryland.

M. DAVID RICHMAN, *Assistant in Pharmacy*

B.S., IN PHARM., University of Maryland, 1960.

Registered Pharmacist—Maryland.

¹ Resigned May 7, 1962 to accept Postdoctorate Fellow in Chemistry (U. S. Public Health Service).

² Resigned December 16, 1961.

³ Resigned February 2, 1962.

⁴ Resigned June 30, 1962.

⁵ Resigned February 7, 1962.

* Effective December 18, 1961.

FRANCIS J. TINNEY, *Assistant in Pharmacy*

B.S. IN PHARM., St. John's University, 1959; M.S., 1961.

Registered Pharmacist—New York, Maryland.

Library Staff
Health Sciences Library

IDA MARIAN ROBINSON, *Librarian*

A.B., B.S.L.S.

HILDA E. MOORE, *Associate Librarian*

A.B., A.B.L.S.

SARAH L. ATKINS, *Cataloging Assistant*

MARIE M. CHAFFMAN, *Assistant Circulation Librarian*

JACQUELINE B. CLEM, *Secretary to the Librarian*

EDITH M. COYLE, *Head, Serials Department*

A.B., A.B.L.S., M.A.

RUTH E. HANNA, *Assistant Acquisitions Librarian*

A.B., M.S.L.S.

LORRAINE S. HLAVIN, *Serials Assistant*

SIMONE C. HURST, *Head, Circulation Department*

FLORENCE R. KIRK, *Reference Librarian*

HANS-GUENTHER R. LISTFELDT, *Assistant Serials Librarian*

B.S., M.S.L.S.

BEATRICE MARRIOTT, *Reference Librarian*

A.B.

ELEANOR M. MITTEN, *Head, Catalog Department*

B.S., B.S.L.S.

KATHLEEN R. SCHELLER, *Cataloging Assistant*

ELWOOD STERLING, *Library Clerk*

MARJORIE F. VILK, *Cataloger*

B.S. IN ED.

KATHERINE M. WHEATLEY, *Serials Assistant*

Office Staff

DAISY LOTZ GUE, *Secretary-Stenographer*

MARGARET E. BEATTY, *Senior Stenographer*

†DORIS M. KENNEDY, *Senior Stenographer*

‡FRANCES R. PLITT, *Senior Stenographer*

† Appointed August 28, 1961.

‡ Resigned January 12, 1962.

The School of Pharmacy

History and Program

THE PURPOSES OF THE SCHOOL OF PHARMACY ARE TO TRAIN students for the efficient, ethical practice of all branches of pharmacy; to instruct students in general scientific and cultural subjects so that they can read critically, express themselves clearly, and think logically as members of a profession and citizens of a democracy; to guide students into productive scholarship and research for the increase of knowledge and techniques in the healing arts of pharmacy.

The Maryland College of Pharmacy, the oldest pharmacy school of the South, was organized on July 20, 1840 by a progressive group of Maryland physicians and apothecaries to provide systematic instruction in Pharmacy to replace the out-dated apprenticeship training. The College, incorporated on January 27, 1841, gave its first lectures in November. In 1904, the College joined with a group of medical schools and the Maryland College of Dental Surgery to offer cooperative instruction in the health sciences. The new institution was known as the University of Maryland. In 1920, this group of Baltimore professional schools was merged with the Maryland State College at College Park to form the present University of Maryland.

The School of Pharmacy in Baltimore now occupies buildings constructed specifically for pharmaceutical education. The laboratories and classrooms are equipped with the most modern apparatus and every aid to instruction and for research in pharmaceutical sciences is available.

The library facilities are excellent. The pharmacy collection containing over 30,000 books is housed in the new Health Sciences Library.

Students have access to the time-honored collections of the Enoch Pratt, the Peabody, the Medical and Chirurgical Faculty, and The Johns Hopkins University. The libraries are within convenient distance of the School.

Students also have access to the art collections at the Walters Art Gallery and the Baltimore Museum of Art.

Like all professions devoted to education in the health sciences, pharmacy has expanded its period of training. The American Association of Colleges of Pharmacy requires a Five Year Program and students entering the study of pharmacy on or after the Autumn of 1960 are required to enroll in a Five Year Pharmacy Program.

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education. The School holds membership in the American Association of Colleges of Pharmacy.

Degrees

The School of Pharmacy offers courses leading to the following degrees: Bachelor of Science in Pharmacy, Master of Science, Doctor of Philosophy. The general procedures to be followed by undergraduate students are set forth below.

Candidates for advanced degrees must register in the Graduate School of the University. For detailed information, see the catalog of the Graduate School.

Programs Offered During The 1962-1963 Academic Year

The Senior Year of the four year educational program will be offered by the School of Pharmacy at Baltimore in September 1962. Only qualified students will still be considered for admission to the last year of the four year program.

As a result of a decision by the American Council on Pharmaceutical Education, students beginning a pharmacy or pre-pharmacy curriculum on or after April 1, 1960 are required to enroll in the academic program of not less than five years. At the University of Maryland the five year program consists of two years of a pre-professional program and a three year pharmacy program. Only the three year pharmacy program is offered in Baltimore. The pre-professional program is not available in Baltimore but may

be obtained at the College Park campus of the University or any other accredited university or college where appropriate courses are offered.*

The first year of the professional program was offered in Baltimore in September 1961.

Admission To Advanced Standing In The Four Year Program

Only students who have completed all the requirements for the Freshman, Sophomore and Junior Years or more of the current four year program will be considered as transfer students to be admitted in September 1962.

In addition, an applicant for admission to advanced standing must fulfill the requirements for admission to the freshman class and present official transcripts of his college record along with a certificate of good standing from the college he attended. His grade average must be at least C or the equivalent in the college's grading system. Transfer credit is given only for those courses completed with a grade of C or higher and which are part of the four year curriculum.

Transfers from colleges of pharmacy accredited by the American Council of Pharmaceutical Education may be given credit for the work up through the first three years of the pharmacy curriculum which they have completed.

Transfers from liberal arts colleges are given credit for the liberal arts subjects of the pharmacy curriculum. Not more than a year's credit is given for work completed at a liberal arts college.

All students admitted to advanced standing are required to take those courses in the School's curriculum which they have not completed. In the schedules for transfer students, elementary subjects not completed are given preference over advanced work.

Credit is not given for pharmaceutical work done in evening or correspondence schools, nor is credit given by examination for work done at other institutions if the school did not grant credit.

In determining the academic progress and standing of students who have transferred from other institutions only those courses taken at the School of Pharmacy of the University of Maryland are applied.

Requests for application blanks and information should be directed to the Dean of the School of Pharmacy or to the Director of Admissions of the University in Baltimore.

* Not less than 24 semester hours of academic work immediately prior to admission to the Professional Program at Baltimore must be completed in a regionally accredited college or university.

Requirements for Admission to the Five Year Program

ADMISSION TO PRE-PROFESSIONAL PROGRAM AT COLLEGE PARK

Interested secondary school students are invited to write to the Dean of the School of Pharmacy in Baltimore for a catalog concerning the School and for literature about the opportunities in the pharmacy profession.

A graduate of an accredited secondary school in Maryland whose secondary record indicates probable success in the University will be admitted provided that:

- 1) his scholastic average in major subjects in his last two years in high school has been satisfactory;
- 2) his program has included the following:

<i>Subjects</i>	<i>Recommended</i>	<i>Required</i>
English	4 Units	4 Units
College Preparatory Mathematics—including algebra (1), plane geometry (1) and additional units in advanced algebra, solid geometry, trigonometry, or advanced mathematics	4	2
Physical Sciences (Chemistry and Physics)	2	1
History and Social Sciences	2	1
Biological Sciences	1	0
Foreign Language—German or French	2	0
Unspecified academic subjects	1	8
Total	16	16

- 3) he has had the test results of the American College Testing Program submitted to the University Admissions Office;
- 4) he has a satisfactory general recommendation from his secondary school as to his character and ability.

All applicants for admission, who do not qualify as Maryland residents (see definition of Residents and Non-Residents, page 12) must also have the results of the American College Testing Program and complete high school records submitted to the Admissions Office. Only a limited number of well qualified out-of-state applicants can be considered for admission since first preference in admission is given to Maryland residents.

A complete statement of admission requirements and policies will be found in the publication entitled "An Adventure in Learning." A copy of this publication may be obtained by writing to the Office of University Relations, North Administration Building, University of Maryland, College Park, Maryland.

Application forms may be obtained only from the Director of Admissions of the University of Maryland at College Park. Applications must be made to the Director of Admissions, at College Park, Maryland.

School of Pharmacy

A fee of \$10.00 must accompany a prospective student's application for admission. If a student enrolls for the term for which he applied, the fee is accepted in lieu of the matriculation fee.

Annual costs of attending the University at College Park for Maryland residents include: fixed charges, \$200.00; instructional materials, \$24.00; special fees, \$77.00 to \$82.00; board, \$400.00 and lodging, \$230.00 to \$260.00. Non-resident students are assessed an additional fee of \$350.00 and lodging costs are \$280.00 to \$310.00.

The pre-professional program offered at College Park is as follows:

COLLEGE PARK DIVISION

	(Semester—)	
	I	II
<i>First Year</i>		
Chemistry 1, 3—General Chemistry	4	4
*English 1, 2—Composition and American Literature	3	3
Math. 10, 11—Algebra, Trigonometry and Analytical Geometry --	3	3
or		or
Math. 18, 19—Elementary Mathematical Analysis	5	5
Zoology 1—General Zoology.....	4	--
Botany 1—General Botany	--	4
Physical Activities	1	1
Air Science 1, 2—Basic Air Force R.O.T.C. (Men).....	1½	2
Health 2, 4—Health (Women).....	2	2
Total	15½-19	17-19
<i>Second Year</i>		
*English 3, 4 or 5, 6—Composition and World or English Literature	3	3
*History 5, 6—History of American Civilization.....	3	3
Physics 10, 11—Fundamentals of Physics.....	4	4
Chemistry 19—Elements of Quantitative Analysis.....	--	4
Economics 37—Fundamentals of Economics.....	3	--
*Government and Politics I or Group I Elective.....	3	--
Elective:		
Approved Elective from Group I or Group II of American Civilization Program	--	3
Air Science 3, 4—Basic Air Force R.O.T.C. (Men).....	2	1½
Physical Activities	1	1
Total.....	17-19	18-18½

*The Program in American Civilization.

THE PROGRAM IN AMERICAN CIVILIZATION

The University considers that it is important for every student to achieve an appreciative understanding of this country, its history and its culture. It has therefore established a comprehensive program in American Civilization. This program is also designed to provide the student with a general educational background.

Work in American Civilization is offered at three distinct academic levels. The first level is required of all freshmen and sophomores at the University and is described below. The second level is for undergraduate students wishing to carry a major in this field (see catalog for the College of Arts and Sciences). The third level is for students desiring to do graduate work in the field (see catalog for the Graduate School).

All students receiving a baccalaureate degree from the University of Maryland must (except as specific exceptions are noted in printed curricula) obtain 24 semester hours of credit in the lower division courses of the American Civilization Program. Although the courses in the Program are prescribed generally, some choice is permitted, especially for students who demonstrate in classification tests good previous preparation in one or more of the required subjects.

The 24 semester hours in American Civilization are as follows:

1. English (12 hours, Eng. 1, 2 and 3, 4 or 5, 6), American History (6 hours, H. 5, 6), and American Government (3 hours, G. & P. 1) are required subjects; however, students who qualify in one, two or all three of these areas by means of University administered tests are expected to substitute certain elective courses. Through such testing a student may be released from 3 hours of English (9 hours remaining as an absolute requirement), 3 hours of American History (3 hours remaining as an absolute requirement), and 3 hours of American Government. Students released from 3 hours of English will take Eng. 21 instead of Eng. 1 and 2. Those released from 3 hours of History will take, instead of H. 5 and 6, any one of the following three hour courses: H. 41, H. 42, H. 51, H. 52, H. 61, H. 62, H. 71, or H. 72. Students who have been exempted from courses in English, American History, or American Government may not take such courses for credit.

2. For the 3 additional hours of the 24 hours required, students elect one course from the following group (Elective Group I):

Economics 37, Fundamentals of Economics. (Not open to Freshmen.

Students who may wish to take additional courses in economics should substitute Economics 31 for Economics 37).

Philosophy 1, Philosophy of Modern Man

Sociology 1, Sociology of American Life

Psychology 1, Introduction to Psychology

(Students enrolled in the College of Business and Public Administration will normally meet this requirement by taking Economics 31 in the sophomore year.)

3. Students who, on the basis of tests, have been released from 3, 6 or 9 hours of otherwise required courses in English, American History or American Government (see 1 above), shall select the replacements for these courses from any or all of the following groups: (a) more advanced courses in the same department as the required courses in which the student is excused, or (b) Elective Group I (see 2 above), provided that the same course may not be used as both a Group I and a Group II choice, or (c) Elective Group II. Group II consists of the following 3-hours courses:

H. 42, Western Civilization; either H. 51 or 52, The Humanities; either Music 20, Survey of Music Literature or Art 22, History of American Art; and Sociology 5, Anthropology.

Admission To The Professional Program (Of Five Year Curriculum) At Baltimore, Maryland

The first year of the Professional Program of the five year curriculum was offered for the first time beginning September 1961. This program with the pre-professional courses is given in summary forms on pages 5, 36, and 37.

1. FROM COLLEGE PARK DIVISION

Students who have completed the prescribed pre-professional program at College Park with a scholastic average of not less than C (2.0) will qualify for advancement to the pharmacy program at Baltimore.

In the semester preceding enrollment in the Baltimore division of the School of Pharmacy each student will be required to complete a form of intent and return it to the School of Pharmacy Advisor at College Park.

2. FROM OTHER UNIVERSITIES AND COLLEGES

A. Prerequisites

Applicants for admission must present evidence of having completed successfully two academic years of work in an accredited college* of arts and sciences based upon the completion of a four year high school course or the equivalent in entrance examinations. The college course must consist of a minimum of 60 semester hours of credit exclusive of physical education, military science or similar courses. The 60 semester hours must include 12 hours of English, 6 hours of mathematics (algebra, trigonometry and

*Not less than 24 semester hours of academic work immediately prior to admission to the Professional Program at Baltimore must be completed in a regionally accredited college or university.

analytical geometry), 4 hours of botany and 4 hours of zoology (or 8 hours of general biology), 8 hours of general inorganic chemistry (including qualitative analysis), 4 hours of quantitative chemistry, 8 hours of physics, 3 hours of economics, 6 hours of history and the remainder as electives from the non-science areas. It is strongly recommended that the electives include political science and sociology although courses in philosophy, psychology, speech and foreign languages will be given consideration.

All applicants for admission to the School of Pharmacy at Baltimore must have a scholastic average of not less than C (2.0) when the lowest passing grade is D (1.0), or its equivalent. The average shall be based on all college courses undertaken by the student in his pre-professional program, exclusive of credit in military science, physical education, hygiene, or similar courses. *Transfer credit is given only for the courses completed with a grade of C (2.0) or higher and which are a part of the pre-professional curriculum.*

B. Application Procedures

Candidates seeking admission to the School of Pharmacy in Baltimore should write to the Director of Admissions and Registrations, University of Maryland, Building 520R, Room 201, Lombard and Greene Streets, Baltimore 1, Maryland. Applicants wishing advice on any problem relating to their applications should communicate with the above office.

Admission To Advanced Standing In The Four Year Program In Baltimore

1. Request the Dean of the School of Pharmacy to send the preliminary application blank. Fill the blank out fully including the names of all schools and colleges which the candidate has attended. Sign the blank and return it with the required photographs and a seven dollar and fifty cent investigation fee to the Director of Admissions. (This fee will not be refunded or credited on any subsequent bill.)

2. Request your high school(s) to send a transcript of your record(s) to the Admissions Office. If these credentials appear satisfactory, the prospective student will be advised.

3. The Admissions Office acts continuously upon the applicants of candidates whose credentials are complete, except for the final school record, and the School of Pharmacy notifies such candidates who appear satisfactory that they have been tentatively accepted.

Enrollment In The Pre-Professional Program at College Park

Students applying for the first two years of the Pharmacy curriculum at College Park may obtain application blanks by writing to the Admissions Office at College Park. Students meeting the requirements for admission will receive letters of admission from the Admissions Office at College

Park. Admitted students will receive detailed directions for registering from the Office of the Registrar at College Park a few weeks prior to the September registration period.

There is a fee of \$3.00 for changes in registration made after the first week of instruction.

Enrollment In The Professional Program At Baltimore

1. FROM COLLEGE PARK DIVISION

Students who had filed with the College Park Pharmacy Advisor a letter of intent to continue with the professional program of the curriculum and who have completed the requirements of the pre-professional program will be notified by the Dean of the School of Pharmacy that they have qualified for advancement into the professional program.

These students will receive detailed directions for registering from the Baltimore Office of the Registrar a few weeks prior to the September registration period.

2. FROM OTHER UNIVERSITIES AND COLLEGES

Students meeting the requirements for admission will receive certificates of admission issued by the Director of Admissions and Registrations at Baltimore. Admitted students will receive detailed directions for registering from the Office of the Registrar at Baltimore a few weeks prior to the September registration period.

Tuition and Fees (Baltimore Campus)

FULL-TIME UNDERGRADUATE STUDENTS

<i>Tuition Fee (per semester)</i>	
Residents of Maryland	\$135.00
Non-residents	160.00
<i>Laboratory Fee (per semester)</i>	15.00
(This one fee covers all laboratory courses)	
* <i>Student Union Fee (per annum)</i>	30.00
* <i>Special Fee (per annum)</i>	10.00
* <i>Student Union Fee (Summer Session)</i>	6.00

*The Student Union fee is payable by all students enrolled in the Professional Schools on the Baltimore Campus and is used to pay interest on and amortize the cost of construction of the Union Building. The Special fee is payable by all full-time students enrolled in the Professional Schools on the Baltimore campus and is used to finance the equipment needed for the Union Building. For students enrolling for the first time at the beginning of the second semester, the Student Union Fee will be \$15.00; the Special Fee will be \$5.00. All students carrying as much as 12 credit hours of work are considered full-time students subject to this fee.

All summer school students will pay a \$6.00 Student Union Fee. This Student Union Fee is in addition to the tuition, laboratory fees, and book charges, etc.

University of Maryland

<i>Student Activities Fee (per semester)</i>	10.00
(This fee covers subscription to the yearbook, <i>Terra Mariae</i> , all expenses of School luncheons, picnics, dances.)	

The tuition, laboratory and student activities fees for each semester are payable at the time of registration therefor. The Student Union fee and the Special fee are payable in full at the time of first registration. Students wishing to make arrangements for deferred payment of tuition charges must do so with the Financial Office at or prior to registration for the semester for which such charges are imposed.

Incidental Charges

For New Students Only (Not applicable to students accepted from School of Pharmacy, College Park)

Application fee (non-returnable)	7.50
Matriculation fee (non-returnable)	10.00
Deposit upon acceptance for admission	50.00
(This fee will be credited against the first semester's tuition.)	

For Seniors

Graduation Fee (To be paid in February of the Senior Year)	15.00
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Delinquencies and Breakage

Late Registration Fee	5.00
Special Examination Fee	5.00
Breakage—Students are required to pay for all breakage in excess of \$5.00 per year	

Other Expenses

Books and supplies, approximately	75-150.00
Students registering for more than a regularly scheduled semester's work will be charged additionally for each course.	
Fee for Changes in Registration after first week	3.00

PART-TIME UNDERGRADUATE STUDENTS

All students registered for twelve semester hours or more are considered full-time students. Part-time students are charged as follows:

<i>Tuition Fee (for each semester hour per semester)</i>	\$15.00
<i>Laboratory Fees (per semester)</i>	
Anatomy and Histology	10.00
Chemistry	12.00
Microbiology	11.00
Pharmacognosy	5.00
Pharmacology	10.00
Pharmacy	10.00
Physiology	10.00

School of Pharmacy

*Student Union Fee (<i>per annum</i>)	6.00
*Student Union Fee (<i>Summer Session</i>)	6.00
Student Activities Fee (<i>per semester</i>)	10.00

GRADUATE STUDENTS

Matriculation fee (for new students only, non-returnable)	\$10.00
Tuition fee (<i>per semester hour each semester</i>)	15.00
Laboratory fee—Same as undergraduate schedule above	
*Student Union Fee (<i>per annum</i>)	30.00
*Student Union Fee (<i>Summer Session</i>)	6.00
*Special Fee (<i>per annum</i>)	10.00

Graduation Fee

Master's degree	10.00
Doctor's degree (including hood and microfilming of thesis)	50.00

REFUND OF FEES UPON WITHDRAWAL (BALTIMORE CAMPUS)

Students withdrawing from School at any time during the academic year, must file a written request for withdrawal with the Dean. Students who do not comply with this ruling are not issued an honorable dismissal and are not accorded any refund of tuition. Minors may withdraw only with the written consent of parent or guardian. Fees, excluding Application Fee, Matriculation Fee, Student Activities Fee, the \$50.00 deposit on tuition, and any scholarship credit, are refunded to withdrawing students in accordance with the following schedule:

Period from date instruction begins:

Two weeks or less.....	80%
Between two and three weeks.....	60%
Between three and four weeks.....	40%
Between four and five weeks.....	20%
Over five weeks.....	No return

The date used in computing refunds is the date the application for withdrawal is filed in the Office of the Dean.

*The Student Union fee is payable by all students enrolled in the Professional Schools on the Baltimore Campus and is used to pay interest on and amortize the cost of construction of the Union Building. The Special fee is payable by all full-time students enrolled in the Professional Schools on the Baltimore campus and is used to finance the equipment needed for the Union Building. For students enrolling for the first time at the beginning of the second semester, the Student Union Fee will be \$15.00; the Special Fee will be \$5.00. All students carrying as much as 12 credit hours of work are considered full-time students subject to this fee.

All summer school students will pay a \$6.00 Student Union Fee. This Student Union Fee is in addition to the tuition, laboratory fees, and book charges, etc.

University of Maryland

Text Books

Each student is required to have his own text books. The books required in each course will be announced at the beginning of each semester.

Tuition and Fees for Pre-professional Program (College Park Campus)

See page 5 for summary statements and consult "Adventure in Learning" which is available from College Park, Maryland.

Changes In Curriculum

The Faculty Assembly reserves the right to make, at any time, such changes in the curriculum as may be found necessary or desirable.

Definition of Residence and Non-Residence

Students who are minors are considered to be resident students if at the time of their registration their parents have been domiciled in the State of Maryland for at least six months.

The status of the residence of a student is determined at the time of his first registration in the University, and may not thereafter be changed by him unless, in the case of a minor, his parents move to and become legal residents of Maryland by maintaining such residence for at least six months. However, the right of the minor student to change from a non-resident status to resident status must be established by him prior to the registration period set for any semester.

Adult students are considered to be residents if at the time of their registration they have been domiciled in Maryland for at least six months provided such residence has not been acquired while attending any school or college in Maryland or elsewhere. *Time spent on active duty in the armed services while stationed in Maryland will not be considered as satisfying the six-months period referred to above except in those cases in which the adult was domiciled in Maryland for at least six months prior to his entrance into the armed service and was not enrolled in any school during that period.*

The word "domicile" as used in this regulation shall mean the permanent place of abode. For the purpose of this rule only one domicile may be maintained.

Academic Regulations (College Park Campus)

Each entering student is subject to the rules and policies published in the official "University General and Academic Regulations."

Academic Regulations (Baltimore Campus)

ATTENDANCE REQUIREMENTS

Students who have not attended eighty-five percent of scheduled classes and laboratory periods for any subject are not admitted to the final examination in that subject. Absences due to illness and late registration are normally counted with the fifteen percent allowable absence. Lateness of more than half a period is construed as absence; two latenesses of less than half a period are also construed as an absence.

EXAMINATIONS

Written and oral quizzes are given throughout the semester at the discretion of the instructor. Final examinations are held at the end of each semester as scheduled on the calendar printed in this catalog.

Students unable to appear for final examinations must report to the Dean immediately. When the absence is justifiable, the Dean will grant permission for a deferred examination.

GRADING SYSTEM

The School uses the standard University of Maryland grading system:

<i>Grade</i>	<i>Interpretation</i>	<i>Point Value</i>
A	Excellent	4
B	Good	3
C	Fair	2
D	Poor but passing	1
F	Failure	0
I	Course work incomplete	replaced by definite grade when course requirements have been met

Standing in scholarship is based upon the grade-point average for the semester's work. This average is found by multiplying the grade received by the number of credit hours the course carries, e.g.:

<i>Subject</i>	<i>Credit</i>	<i>Grade</i>	<i>Points</i>
Chemistry	4	C	8
Microbiology	4	C	8
Pharmacognosy	4	B	12
Pharmacy	4	A	16
Pharmacy Administration	3	D	3
			47
			19

Dividing the number of points by the number of credits, the student is found to have a grade point average of 2.47.

When, for any reason, a course is repeated, the final mark is used.

In computing scholastic averages only those courses taken in residence at the University of Maryland are considered.

MID-SEMESTER FAILURE WARNINGS

Each student is assigned to a Class Advisor who counsels him on his academic standing. Six weeks after the beginning of each semester, the Dean warns and the Advisor interviews all students earning grades of D and F.

INCOMPLETE WORK

The mark of I (incomplete) is exceptional. It is to be given only to a student whose work in a course has been qualitatively satisfactory, when, because of illness or other circumstances beyond his control, he has been unable to complete the requirement. Whenever the mark I is used the instructor enters on the class card a reason of the character stated above with an estimate of the quality of the student's work. In cases when this mark is given the student must complete the work assigned by the instructor by the end of the next semester in which that subject is again offered or the mark I becomes F.

RAISING GRADE OF D

Work of mark D, or of any passing mark, cannot be raised to a higher mark except by repeating the course. A student who repeats a course in which he failed or for which he has received credit for work done at the University, or elsewhere, must meet all the requirements of the course, including regular attendance, laboratory work, and examinations, but he will not receive any additional credit for the course completed with a passing grade.

If the work is completed at the University of Maryland his final mark will be substituted for the mark already recorded. Although the final mark received in the course will be used in determining credit for promotion and graduation, it does not apply to honors and awards. See applicable section under "Honors and Awards."

If the student is authorized by the Dean to repeat the course or its equivalent, at another university or college, the regulations applicable to transfer of credit apply. Credit is given if the course is completed with a grade of C (2.0) or higher; for purposes of computing grade averages, transfer credit is considered as the equivalent of a grade of C (2.0).

REMOVAL OF AN F GRADE

A student receiving an F grade in any course and if not successful in raising his grade after repeating the course once, will be required to with-

draw from the School of Pharmacy. In unusual cases, a student may be permitted, with the written permission of the Dean and the head of the department giving the course, to repeat the course for the second time. Such permission can be given to the student for only one course.

An appropriately supported petition for any exception to the above regulation must be submitted to the Faculty Council. Such exception will be granted under unusual and extraordinary circumstances and shall require the approval of the head of the department giving the course.

The above rules on removal of an F grade apply also to the student who is permitted to take the course at another institution to meet requirements for the degree from the School of Pharmacy of the University of Maryland.

REGULATIONS FOR PROMOTION AND PROBATION

All students, namely Seniors of the four year program and all students in the professional program of the five year curriculum, at the School of Pharmacy are expected to maintain a grade average of not less than C (2.0) for each semester. Any student in the above categories who fails to maintain a grade average of C (2.0) for any semester will be placed on probation during the next semester. Students in the last year of either the four or five year program must maintain a grade average of C (2.0) to become eligible for graduation.

Students who fail more than one-fifth and less than one-half, in semester hour credit, of their scheduled work for any semester will be placed on probation during the next semester.

Any student on probation must pass all courses for which he is registered and must maintain a grade average of C (2.0) or he will be automatically dropped from the School of Pharmacy at the end of that semester.

A student who fails in one-half or more of his scheduled academic credits in any semester shall be dismissed at the end of that semester for unsatisfactory scholarship.

Any student who has been on probation for two semesters and then obtains a probation grade point average for a third semester will be automatically dropped at the end of that semester.

Any student who is dismissed from the School of Pharmacy is required to report to the Dean's Office for dismissal procedures.

REGULATIONS FOR READMISSION OF STUDENTS DROPPED FOR POOR ACADEMIC STANDING

A student who has been dropped for poor academic standing may apply in writing to the Dean for readmission after a lapse of at least one semester.

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Any student who is readmitted shall be placed on probation for that semester.

Any student who has been dropped for poor academic standing may be readmitted only once.

REGULATIONS FOR REVIEW

In the application of the foregoing rules and regulations, the Faculty Assembly of the School of Pharmacy shall act as the final Board of Review. Any student may apply in writing to the Faculty Assembly for a reconsideration of his particular case.

GRADES OF STUDENTS WITHDRAWING FROM THE SCHOOL OF PHARMACY

The record of students who withdraw is computed as follows:

Before eight weeks of the semester have passed	WX
After eight weeks of the semester have passed, if work has been of passing grade	WP
After eight weeks of the semester have passed, if work has been of failing grade	WF

CLASSIFICATION OF STUDENTS—FOUR YEAR CURRICULUM

Students having 105 or more credit hours with a grade average of C (2.0) in the work of the Junior year are classified as Seniors.

Senior students must maintain a grade average of C (2.0) in the work of the Senior year and have 144-146 credit hours to be considered as candidates for graduation, depending upon the year of their initial enrollment.

CLASSIFICATION OF STUDENTS—FIVE YEAR CURRICULUM PROFESSIONAL PROGRAM

Students who have completed 31-70 credit hours of the Professional Program with a grade average of C (2.0) in addition to the Pre-Professional requirements will be classified as Second Professional Year students.

Retail Majors who have completed 71 credit hours of the Professional Program with a grade average of C (2.0) will be classified as Third Professional Year students. Pre-Graduate Majors in order to advance in their Elective Program and attain the classification of Third Professional Year students must have completed 73 credit hours of the Professional Program with an academic quality indicative of the successful pursuit of graduate work.

Students in the Retail Major or Hospital Major must maintain a grade average of C (2.0) during the Third Professional Year and have completed a minimum of 108 credit hours of the Professional Program to be considered

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as candidates for graduation. Pre-Graduate Majors who have completed a minimum of 110 credit hours with a grade average of at least C (2.0) will be considered as candidates for graduation.

*SENIOR ELECTIVE PROGRAM—FOUR YEAR CURRICULUM

Students are required to elect either the RETAIL Major or the PRE-GRADUATE Major by May 1 of the Junior year. It is recommended that students electing the Pre-Graduate program will have attained a grade point average of at least 2.5 for the three previous years. Those who elect this major should also indicate their choice of electives in the Retail Major in case their average does not permit their election of the Pre-Graduate Major.

RETAIL Majors must choose between Pharmacy 81 and Pharmacy 121 and between Pharmacognosy 62 and Pharmacy 132. PRE-GRADUATE Majors after the 1960-61 academic year, must take Mathematics 20, 21, Calculus, and may be required to take Pharmacy 35, Professional Communications and Pharmacy 38, History of Pharmacy, instead of English 3,4, Composition and World Literature.

*ELECTIVE PROGRAM—FIVE YEAR CURRICULUM

1. Second Professional Year Electives

Students are required to elect either the Retail Major or the Pre-Graduate Major by May 1 of the First Professional Year.

Students to be eligible for the Pre-Graduate Major must have academic standings indicative of aptitudes for the successful pursuit of graduate work and must meet the necessary prerequisites. Students not qualifying for the Pre-Graduate Major will be required to pursue the Retail Major.

2. Third Professional Year Electives

Students must make elective selections by May 1 of the Second Professional Year.

The Retail Major of the Second Professional Year may continue with the Retail Major program or elect the Hospital Major. Students continuing the Retail Major must choose between Pharmacognosy 52, Animal Health Products and Pharmacy 156, Cosmetics and Dermatological Preparations.

The Hospital Majors will follow the prescribed program.

Students in the Pre-Graduate Major will pursue Chemistry 187, 189, 188, 190, Physical Chemistry and Physical Chemistry Laboratory.

*The elective programs must be approved by the Class Advisor and the Dean. For additional information consult with the Class Advisor and see the respective curricula on pages 34, 35, 36, and 37.

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REQUIREMENTS FOR GRADUATION—FOUR YEAR CURRICULUM

The degree of Bachelor of Science in Pharmacy will be conferred upon students who have spent at least the senior year in residence at the School of Pharmacy, who having entered prior to September 1956, have been accredited 144 semester hours instruction, or who having entered in September 1956 or thereafter, have been accredited with 146 semester hours instruction, and who have attained the required grade point standings and met the other requirements.

REQUIREMENTS FOR GRADUATION—FIVE YEAR CURRICULUM

The degree of Bachelor of Science in Pharmacy will be conferred upon students who have spent at least the Third Professional Year in residence at the School of Pharmacy at Baltimore and have been accredited 108 semester hours instruction in the Professional Program as Retail Majors or Hospital Majors or have been accredited 110 semester hours instruction in the Professional Program as Pre-Graduate Majors and who have attained the required grade point standings and met the other requirements.

TRANSCRIPTS OF RECORDS

Students or alumni desiring transcripts of scholastic records may obtain them from the Registrar. The University rules regarding the issuance of transcripts are as follows: one copy of a student's record is made without charge; for additional copies, there is a fee of one dollar for each transcript, except when more than one copy is requested at the same time. In that case, one dollar is charged for the first copy and fifty cents for each additional copy.

Transcript records are of two kinds:

- (a) Informal transcripts which may be obtained by the student or alumnus for such personal use as he may wish; and
- (b) Official transcripts, bearing the University seal, which are forwarded, on request, to educational institutions, Government agencies, etc., as attested evidence of the student's record at the School of Pharmacy and the honorable dismissal therefrom.

No transcript of a student's record will be furnished in the case of any student or alumnus whose financial obligations to the School of Pharmacy have not been satisfied.

Registration With The Maryland Board of Pharmacy

The Maryland Pharmacy Law, as amended in 1931, requires all students entering upon the study of Pharmacy in the State to file application with the Maryland Board of Pharmacy. The law reads as follows:

"Any person enrolling as a student in pharmacy in any school or college of pharmacy in this state shall, not later than thirty days after enrolling, file with the Secretary of the Maryland Board of Pharmacy, an application for registration as a student of pharmacy in which said application he shall be required to furnish such information as the Board may deem appropriate, and simultaneously with the filing of said application, shall pay the Board a fee of one dollar; all such students of pharmacy shall, at the beginning of any subsequent school or college year, submit to the said Board a sworn statement of any and all actual drugstore experience acquired during the preceding vacation months."

Licensure Requirements of The Maryland Board of Pharmacy

The Maryland Board of Pharmacy will grant a certificate of registration to those persons deemed competent, after examination, by said Board of Pharmacy. Any person of good moral character who has attained the age of twenty-one years, is a graduate of an accredited school or college of pharmacy, and has completed one year as a registered apprentice in a drug store or pharmacy approved by said Board of Pharmacy for such purposes may sit for examination given for the purpose of registration.

A student may not obtain credit or practical experience in a drug store or pharmacy acquired prior to attendance as a regular student in a school or college of pharmacy or while in attendance at said school or college of pharmacy. Four months of the required practical pharmacy experience as a registered apprentice must be acquired subsequent to graduation from an accredited school or college of pharmacy, in a drug store or pharmacy approved by the Board for such purposes.

Prospective students are advised to contact the Secretary of the Maryland Board of Pharmacy, 301 West Preston Street, Baltimore 1, Maryland, for further information relative to the requirements for eligibility for licensure.

Department

The University reserves the right to request at any time the withdrawal of a student who cannot or does not maintain the required standard of scholarship, or whose continuance in the University would be detrimental to his or her health, or the health of others, or whose conduct is not satisfactory to the authorities of the University.

Students of the last classification may be asked to withdraw even though no specific charge be made against them.

Employment

A student should be prepared to finance his education during the entire period of attendance, as all of his time should be spent in the preparation and completion of the scheduled work. Baltimore offers a number of op-

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portunities to secure suitable employment, but it is recommended that students refrain from working during the school session.

Housing

1. WOMEN

A limited number of women may obtain housing accommodations in the Louisa Parsons Hall, 622 West Lombard Street, which is in close proximity to the School of Pharmacy. It offers comfortable living accommodations and it is under the general supervision of the Dean of Women. Bed linens, towels, pillows, blankets and curtains are provided as a part of the general furnishings of the room. Students are requested to bring their own bedspreads, an extra blanket, bureau scarves, small rugs and a laundry bag. The individual student assumes responsibility for all dormitory property assigned to her. Any damage done to property other than that which results from ordinary wear and tear will be charged to the student concerned. The room rates are as follows: Double Room, \$15.00 per month per person. Single Room, \$20.00 per month; Single Room with bath, \$25.00 per month.

Meals may be purchased at the University Cafeteria or in nearby restaurants.

2. MEN

Housing accommodations are available for men in The Baltimore Union. For particulars, see section immediately below.

General Information for The Baltimore Union

The Baltimore Union for students of the Professional Schools is located adjacent to the Professional Schools at 621 West Lombard Street. Accommodations for 195 men are provided in a five-story semi-air conditioned building which also contains a cafeteria, fountain lounge, meeting rooms, laundry facilities, game room, bookstore, barber shop and lounges on each floor. Double rooms are available. The rental agreement is made for rooms only; meals are served cafeteria style on a cash basis. The contract for accommodations covers the 1962-63 academic year.

ACADEMIC YEAR

Double Room Rates:

\$150.00 per semester (per person)

\$80.00 per eight weeks summer session (per person)

Single Room Rates:

\$45.00 per month

The three single rooms available will be assigned on the basis of length of residence in The Baltimore Union.

What the Rate covers:

The rate shown above is per person and includes the following:

Room furnishings, bed and cover, mattress, chest of drawers, closet, book shelves, desk, medicine cabinet, desk chair and desk lamp.

Maid service will include cleaning of room twice per week and replacement of change of linen once each week.

Telephone service is available through the Chesapeake & Potomac Telephone Company. Cost of the telephone is not included in the room rate. Information can be obtained from the Manager's office. Mail service is also provided.

The resident provides blankets, pillow, towels and linens of which the latter two must be rented through the designated Commercial Rental Service.

A small amount of luggage space is available. Storage of anything other than luggage will *not* be available.

TRANSIENTS

The Rates are:

\$ 4.00 per day

\$24.00 per week

What the Rate covers:

The services will include one bath towel, one face towel, one face cloth, soap and change of linen daily (once per week if weekly guest).

HOW TO APPLY FOR A ROOM ASSIGNMENT

Write:

MANAGER'S OFFICE
The Baltimore Union
621 West Lombard Street
Baltimore 1, Maryland

Parking

The University of Maryland does not provide any parking facilities on university parking lots for students on the Baltimore Campus.

The Health Sciences Library

The new Health Sciences Library was opened for the Fall Term of the 1960-1961 School Year. This new library building includes the collections of the Schools of Pharmacy, Dentistry, Medicine, Nursing and Social Work.

The Rules and Regulations by the library are available for distribution to students at all times.

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Professorships, Graduate Fellowships and Grants

The Emerson Professorship of Pharmacology

Captain Isaac E. Emerson, of Baltimore, gave to the School of Pharmacy in 1927, a sum of money to establish a professorship of Pharmacology. The first appointment was made in 1930 when Dr. Marvin R. Thompson was designated Emerson Professor of Pharmacology. The chair was subsequently held by the late Dr. Clifford W. Chapman. Dr. Casimir T. Ichniowski, the present incumbent, was appointed June 15, 1951.

American Foundation for Pharmaceutical Education Fellowships

The American Foundation for Pharmaceutical Education offers annual fellowships of up to \$1500.00 for single persons or up to \$1800.00 for married individuals who are promising graduate students desirous of doing research in pharmacy, pharmaceutical chemistry, pharmacology, and pharmacognosy; non-veteran students may also apply for an additional allowance up to \$600.00 for tuition, fees, and supplies. Address applications directly to the American Foundation for Pharmaceutical Education, 777 Fourteenth Street, N.W., Washington 5, D. C., between February 15 and March 15 for consideration for the forthcoming September.

The H. A. B. Dunning Research Fellowship

Dr. H. A. B. Dunning, an alumnus of the School of Pharmacy, former associate professor of chemistry, and prominent manufacturing pharmacist of Baltimore, has contributed annually since 1930 a sum of money to maintain a research fellowship in pharmaceutical chemistry. The fellowship is open to promising graduate students interested in pharmaceutical chemistry.

Centennial Research Fund Fellowships

At the celebration of the hundredth anniversary of the founding of the School of Pharmacy, a sum of money was collected to provide two fellowships for research studies in the following fields: pharmacy, pharmaceutical chemistry, pharmacology, microbiology, and pharmacognosy. The selection of candidates for these fellowships will be made by the Faculty Assembly with the approval of the Dean.

The Noxzema Foundation Fellowship

The Noxzema Foundation, Inc., is contributing a fund not to exceed \$1600.00 for a graduate fellowship open to United States citizens. A candidate will be selected on the basis of his educational qualifications by the Fellowship Committee of the School of Pharmacy of the University of Maryland to which the Noxzema Foundation, Inc. may appoint a non-voting mem-

ber. This fellowship may be renewed annually at the discretion of the grantors.

Research Grant of the Alumni Association of the School of Pharmacy

The Alumni Association of the School of Pharmacy gives to the School each year the sum of \$100.00 to be used as a research grant for a student selected by the Committee on the Research Grant of the Alumni Association to enable the student to engage in pharmaceutical research in the School of Pharmacy. The research conducted must be of general pharmaceutical interest and must be accepted upon completion for publication in one of the pharmaceutical journals.

Other Research Grants

The Department of Pharmaceutical Chemistry has substantial grants from the Smith, Kline & French Laboratories, the National Institutes of Health and Cancer Chemotherapy National Service Center. The Department of Anatomy and Physiology has been awarded a National Science Foundation Research Grant. Through these grants, the School of Pharmacy is able to provide a number of research fellowships available to graduate and post-doctoral students in pharmaceutical chemistry and physiology.

Special Grants

The Atomic Energy Commission has allotted funds to the Department of Anatomy and Physiology to equip a radioisotope laboratory for the School of Pharmacy at Baltimore.

The Smith, Kline & French Foundation has provided funds to the Department of Pharmacy for the procurement of specialized research equipment.

Assistantships

Graduate Assistantships

Graduate assistantships, covering tuition and laboratory fees and carrying a stipend of \$2,000.00 for a ten-month academic year, are available to qualified students giving fourteen hours of laboratory and teaching services to the departments in which they serve. Such assistants can usually carry two-thirds of the normal graduate work.

Residencies in Hospital Pharmacy

1. University (of Maryland) Hospital

The Department of Pharmacy of the University Hospital together with the School of Pharmacy and the Graduate School of the University of Maryland offer annually, to qualified graduate pharmacists, residencies in hospital pharmacy. The appointments beginning July first are for twenty-four months. During the period of ap-

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pointment the resident divides his time between hospital pharmacy and graduate study leading to the Master of Science degree granted by the University of Maryland and a certificate of residency to be awarded by the University Hospital. Full time training will be required during the summer of 1963. Two weeks of vacation are allowed during the term of appointment. The University Hospital provides a stipend of \$2400.00 per year for the first year as Assistant Resident. Completion of the Assistant Residency leads to appointment as Resident with a stipend of \$3000.00 per year. Parking space, uniforms and laundering of uniforms are free of charge. The residents must pay the tuition, laboratory and other fees for graduate work in the University.

Complete information on this program may be secured by addressing inquiries to the Director of Pharmaceutical Service, University Hospital, Baltimore 1, Maryland or to the Dean of the School of Pharmacy, University of Maryland, Baltimore 1, Maryland.

2. The Johns Hopkins Hospital Pharmacy

The Pharmacy Department of the Johns Hopkins Hospital, together with the School of Pharmacy and the Graduate School of the University of Maryland, offer annually to qualified graduate pharmacists several residencies in hospital pharmacy. The appointments, beginning September first, are for twenty-two months. During twenty months, appointees devote half time to hospital pharmacy service and half time to graduate work leading to the Master of Science degree granted by the University of Maryland and a certificate of residency awarded by the Johns Hopkins Hospital. Full time training in the Johns Hopkins Hospital Pharmacy is required for two (2) months during the summer of 1963. Four weeks of vacation are allowed during the term of appointment. The Hospital provides a stipend of \$200.00 per month for the first year and \$250.00 per month thereafter and the School of Pharmacy reduces tuition fees for these candidates by 25%. However, candidates must pay the regular laboratory and other fees.

Complete information on this program may be secured by addressing inquiries to the Chief Pharmacist, Johns Hopkins Hospital, Baltimore 5, Maryland, or the Dean of the School of Pharmacy, University of Maryland, Baltimore 1, Maryland.

Scholarships and Loans (College Park Campus)

All requests for information concerning College Park scholarships and loans should be directed to:

Director, Student Aid
University of Maryland
College Park, Maryland

*Alumni Association of the School of Pharmacy Scholarships **

The Alumni Association of the School of Pharmacy of the University of Maryland makes available annually scholarships to qualified pre-professional pharmacy students on the basis of worthiness, moral character, scholastic achievement and the need for financial assistance. These scholarships are open only to residents of the state of Maryland. Each scholarship not exceeding \$500.00 per academic year is applied in partial defrayment of fees and expenses at College Park.

*Maryland Pharmaceutical Association Scholarships **

The Maryland Pharmaceutical Association makes available annually scholarships to pre-professional pharmacy students on the basis of worthiness, moral character, scholastic achievement and the need for financial assistance. Each scholarship not exceeding \$500.00 per academic year is used in partial defrayment of fees and expenses at College Park. These scholarships are open only to residents of the state of Maryland.

*Read's Drug Stores Foundation Scholarships **

The Read's Drug Stores Foundation contributes annually several scholarships to pre-professional pharmacy students on the basis of worthiness, scholastic achievement, moral character and the need for financial assistance. Each scholarship not exceeding \$500.00 per academic year is applied to defray partially the fees and expenses at College Park, Maryland. Recipients must have been residents of the state of Maryland for at least one year prior to the awarding of the scholarship.

For information concerning other scholarships and the loans available consult the University bulletin "Adventure in Learning" available from College Park, Maryland.

Scholarships and Loans (Baltimore Campus)

All requests for information concerning scholarships should be addressed to Dean Noel E. Foss, School of Pharmacy, University of Maryland, 636 W. Lombard St., Baltimore 1, Maryland. The selection of the recipients of the scholarships and loans is made by the Dean in conjunction with a committee of the Faculty of the School of Pharmacy.

Alumni Association School of Pharmacy Scholarships

The Alumni Association of the School of Pharmacy of the University of Maryland makes available annually scholarships worth \$100.00 per

*These scholarships are awarded by the Committee on Scholarships and Grants-in-Aid of the University of Maryland in cooperation with the Scholarship Committee of the Alumni Association of the School of Pharmacy and the Maryland Pharmaceutical Association.

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semester to qualified students who have maintained a superior scholastic average and who are in need of financial assistance to complete their education.

Alumni Association University of Maryland Scholarship

The General Alumni Council of the University Alumni Association provides a scholarship in the amount of \$250.00. The award is based on scholarship, leadership and need.

American Foundation for Pharmaceutical Education Scholarships

The American Foundation for Pharmaceutical Education makes available scholarships worth \$100.00 per semester to qualified seniors of the four year curriculum and students of the second and third years of the professional program of the five year curriculum.

Carroll Chemical Company Scholarship

The Carroll Chemical Company of Baltimore, Maryland, initiated in 1956 a fund to provide one undergraduate scholarship to a qualified student in the first year of the professional program who has maintained a superior scholastic average and is in need of financial assistance. This scholarship includes the cost of tuition, fees, textbooks and equipment, not to exceed \$500.00 per academic year.

The Charles Caspari, Jr., Memorial Scholarship

In memory of Prof. Charles Caspari, Jr., former Dean of the School of Pharmacy, a number of his friends and Alumni have made an endowment for a scholarship worth \$100.00 annually.

The Charles Landon Henry Memorial Scholarship

In memory of her husband, Charles Landon Henry, for many years a member of the Maryland Pharmaceutical Association, Mrs. Nora Howard Henry has endowed a scholarship worth \$100.00 to be awarded annually by the Scholarship Committee of the School of Pharmacy, University of Maryland to a senior student who has shown superior proficiency in practical and commercial pharmacy.

A. M. Lichtenstein Scholarship

In memory of her husband, A. M. Lichtenstein, distinguished alumnus of the School of Pharmacy, Class of 1889, the late Mrs. Francina Freese Lichtenstein bequeathed a sum of money to endow a scholarship to be awarded annually to a resident of Allegheny County, Maryland. The recipient of the

award is to be selected on the basis of financial need, character and scholarship.

The Noxzema Foundation Scholarships

The Noxzema Foundation, Inc. is contributing a fund to provide one or two undergraduate scholarships not to exceed \$500 each, open to citizens of the United States. Candidates will be selected on the basis of their educational qualifications by the Scholarship Committee of the School of Pharmacy of the University of Maryland to which the Noxzema Foundation, Inc. may appoint a non-voting member. This scholarship may be renewed annually at the discretion of the grantors.

The Ladies' Auxiliary, Prince Georges-Montgomery County Pharmaceutical Association Scholarship

The Ladies' Auxiliary, Prince Georges-Montgomery County Pharmaceutical Association provides a scholarship in the amount of \$50.00 to a student who has maintained a superior scholastic average and who is in need of financial aid.

Read's Drug Stores Foundation Scholarships

The Read's Drug Stores Foundation of Baltimore, Maryland, contributes funds to provide scholarships paying \$100.00 per semester to qualified students who have maintained a superior scholastic average and who are in need of financial assistance to complete their schooling.

Rose Hendler Memorial Loan Fund

L. Manuel Hendler and Family have established a loan fund in memory of Mrs. Rose Hendler for needy students. This fund is available to qualified seniors of the four year curriculum and students of the second and third years of the professional program of the five year curriculum, and loans therefrom are made upon the recommendation of the Dean.

NDEA Student Loans

The National Defense Education Act of 1958 provides funds for student loans. A student may borrow in one year a sum not exceeding \$800 and during his entire course of study may borrow a sum not exceeding \$5000. The borrower must sign a note for the loan and agree to interest and repayment terms established by the University. Repayment of the loan begins

*These scholarships are awarded by the Committee on Scholarships and Grants-in-Aid of the University of Maryland in cooperation with the Scholarship Committee of the Alumni Association of the School of Pharmacy and the Maryland Pharmaceutical Association.

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one year after the borrower ceases to be a full time student and must be completed within ten years thereafter. No interest is charged on the loan until the beginning of the repayment schedule. Interest after that date is to be paid at the rate of 3 per cent per annum.

Honors and Awards

University Scholarship Honors

Final honors for excellence in scholarship are awarded to not more than one-fifth of the graduating class in each college including the School of Pharmacy. The honor designations are listed in the commencement program and are recorded on the recipients' diplomas.

To be eligible for honors, pharmacy students must complete at least two academic years of resident work at Baltimore applicable for the degree of Bachelor of Science in Pharmacy with an average grade of B (3.0) or higher. Those in the first tenth of the class will graduate with High Honors and those in the second tenth of the class, with Honors.

The Dean's Honor List

The Dean publishes at the end of each semester a list of those students who have maintained an average of "B" or better during the semester. Students whose names appear on the list both semesters receive the School's Academic Medal at the Honors Day Convocation held in June of each year.

In computing the grade point standing for the Dean's Honor Roll, if a student repeats more than one course in any year, both grades earned for these courses will be averaged in determining grade point standing.

Phi Kappa Phi Honorary Fraternity

The University of Maryland Chapter of Phi Kappa Phi, a national fraternity for honor students in all branches of learning, was established at the University in 1920. Qualified students at the School of Pharmacy are eligible by invitation to join this honorary fraternity at the end of the first semester of the Junior Year of the four year curriculum and the end of the first semester of the First Professional Year of the five year curriculum.

Rho Chi Honorary Pharmaceutical Society

Omicron Chapter of Rho Chi, national Honorary pharmaceutical society, was established at the University of Maryland in 1930. Charters for chapters of this organization are granted only to groups in schools or colleges who are members in good standing of the American Association of Colleges of Pharmacy. Eligibility for membership in the Society is based on high attainment in scholarship, character, personality, and leadership.

The School of Pharmacy Gold Medal

A gold medal is awarded annually to the candidate for the degree of Bachelor of Science in Pharmacy who has attained the highest general average, provided that this average is not below the grade of "B". Certificates of Honor are awarded to the three students having the next highest general averages, provided these averages do not fall below the grade of "B".

Honorable mention is made annually of the first three junior students having the highest general averages, provided these averages do not fall below the grade of "B".

Only courses taken at the University of Maryland are considered in awarding these honors.

The William Simon Memorial Prize

In honor of the late Dr. William Simon, for thirty years a professor of chemistry in the School of Pharmacy, a gold medal is awarded annually by the Faculty Assembly to a candidate for the degree of Bachelor of Science in Pharmacy who has done superior work in the field of practical and analytical chemistry. The recipient must stand high in all subjects. In recommending a student for the prize, the professor of chemistry is guided in his judgment of the student's ability by observation and personal contact as well as by grades.

The Andrew G. DuMez Medal

In memory of Dr. Andrew G. DuMez, late dean and professor of pharmacy at the School of Pharmacy, Mrs. Andrew G. DuMez has provided a gold medal to be awarded annually by the Faculty Assembly to a candidate for the degree of Bachelor of Science in Pharmacy for superior proficiency in pharmacy.

The L. S. Williams Practical Pharmacy Prize

The late L. S. Williams left a trust fund, the income of which is awarded annually by the Faculty Assembly of the School of Pharmacy to the senior student having the highest general average throughout the course in practical and dispensing pharmacy.

The Conrad L. Wich Pharmacognosy Prize

In appreciation of assistance which the Maryland College of Pharmacy extended to him as a young man, Mr. Conrad L. Wich provided a fund, the income from which is awarded annually by the Faculty Assembly of the School to the senior student who has done exceptional work throughout the course in pharmacognosy.

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The Wagner Pharmaceutical Jurisprudence Prize

In memory of her late husband, Mr. Manuel B. Wagner, and her late son, Mr. Howard J. Wagner, both alumni of the School of Pharmacy, Mrs. Sadie S. Wagner, together with her daughter, Mrs. Phyllis Wagner Brill, have provided a fund the income of which is awarded annually by the Faculty Assembly to a senior student for meritorious academic achievement in pharmaceutical jurisprudence.

David Fink Memorial Prize

In memory of David Fink '24, Mr. Samuel I. Raichlen gives a new United States Dispensatory as a prize to the senior student recommended by the Faculty Assembly for proficiency in the general practice of pharmacy.

Phi Alpha Chapter, Rho Pi Phi Fraternity Cup

The Phi Alpha Chapter of the Rho Pi Phi Fraternity provides a cup to be awarded annually to the senior student selected by the Faculty Assembly as having exhibited outstanding qualities of character and leadership.

Alpha Zeta Omega Fraternity Prize

The Kappa Chapter and the Maryland Alumni Chapter of the Alpha Zeta Omega Fraternity provide a prize to be awarded annually to the senior student chosen by the Faculty Assembly for proficiency in pharmacology.

Epsilon Alumnae Chapter, Lambda Kappa Sigma Sorority Prize

The Epsilon Alumnae Chapter of the Lambda Kappa Sigma Sorority provides annually a key which is awarded to the senior student selected by the Faculty Assembly for outstanding proficiency in Pharmacy Administration.

Merck Award

Merck & Company, Inc., Rahway, New Jersey, offers a set of valuable reference books to the senior student who attains a high standing in pharmacy or pharmaceutical chemistry.

Bristol Laboratories, Inc. Award

A copy of Gould's "Medical Dictionary" is made available by Bristol Laboratories, Inc., to the senior student who has contributed the most to pharmacy through his extra-curricular activities.

Rexall Award

The Rexall Drug Company provides a Mortar and Pestle Trophy to the senior student who has demonstrated outstanding qualities of both leadership and scholarship.

Extra Curricular Awards

Students who have given freely of their time for the betterment of the School in extra-curricular activities, receive extra curricular keys at the annual Honors Day Convocation.

Student Organizations (Baltimore Campus)

Student Government Alliance

The Student Government Alliance of the School of Pharmacy is an organization of undergraduate students established for the purpose of aiding in the internal administration of the school for organizing all extra-curricular programs and activities of the student body and for coordinating these programs and activities with those of the Faculty and Administration to foster mutual understanding and cooperation. The Executive Council of the Student Alliance is composed of the President of the Student Government Alliance, the Presidents of the respective classes, and one delegate elected from each undergraduate class.

Student Branch of the American Pharmaceutical Association

The purpose of the Student Branch is to encourage in the broadest and most liberal manner the advancement of pharmacy as a science and as a profession in accordance with the objectives stated in the Constitution of the American Pharmaceutical Association, especially in fostering education in matters involving pharmacy in all of its branches and its application and aiding in promoting the public health and welfare.

Inter-Professional Student Senate

The students of the Baltimore Professional Schools of Dentistry, Law, Medicine, Nursing and Pharmacy established the Inter-Professional Student Senate for purposes of coordinating and facilitating relationships among the Professional Schools and the University Units at College Park.

The Senate is comprised of representatives from each of the five professional schools.

Committee on School of Pharmacy of the Maryland Pharmaceutical Association (1961-1962)

When the School of Pharmacy became a part of the State University in 1920, the Maryland Pharmaceutical Association appointed a standing com-

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mittee known as the Committee on the School of Pharmacy. The duties of this group are to represent the Association in all matters pertaining to the School of Pharmacy and pharmaceutical education. The present members of the Committee are:

Irving I. Cohen, <i>Chairman</i>	
James P. Cragg, Jr., <i>Co-Chairman</i>	
Francis S. Balassone	Samuel I. Raichlen
Frederic T. Berman	Henry G. Seidman
Frank Block	Simon Solomon
Alexander J. Ogrinz, Jr.	John F. Wannenwetsch
Stephen J. Provenza	H. Nelson Warfield

Alumni Association

A meeting of the graduates of the School of Pharmacy of the University of Maryland, then the Maryland College of Pharmacy, was held on May 15, 1871. At this meeting there was organized the Society of the Alumni of the Maryland College of Pharmacy. This Society continued its separate existence as such or as the Alumni Association of the Maryland College of Pharmacy until 1907, when the General Alumni Association of the University of Maryland was formed. Following the organization of the General Alumni Association, the Society remained dormant until June 4, 1926, when it was reorganized as the Alumni Association of the School of Pharmacy, University of Maryland. Each year it is more evident that interest in the Alumni Association is not only maintained, but is growing.

Officers (1961-1962)

Simon Solomon	Honorary President
James P. Cragg, Jr.	President
Samuel A. Goldstein	First Vice-President
Milton A. Friedman	Second Vice-President
Frank J. Slama	Executive Secretary
H. Nelson Warfield	Treasurer

Executive Committee (Elected Members)

Irving I. Cohen, *Chairman*
Harold P. Levin
Robert J. Kokoski
Vito Tinelli, Jr.

FOUR YEAR CURRICULUM

and

FIVE YEAR CURRICULUM

FOUR YEAR CURRICULUM
COURSES, HOURS AND CREDITS

Title and Number of Course	First Semester				Second Semester			
	Hrs. Per Week				Hrs. Per Week			
	Didactic	Lab'y	Total	Credits	Didactic	Lab'y	Total	Credits
Freshman Year								
*Chemistry 1, 3, General Inorganic and Qualitative Analysis -----	2	6	8	4	2	6	8	4
*English 1, 2, Survey and Composition -----	3		3	3	3		3	3
*Mathematics 0, Basic -----	3		3	0				
*Mathematics 10 or 15 -----	3		3	3				
*Mathematics 11 or 17 -----					3		3	3
*Modern Language 1, 2, or 6, 7, French or German -----	3		3	3	3		3	3
**Pharmacy 1, 2, Orientation -----	1		1	1	1		1	1
*Speech 1, 2, Public Speaking -----	1		1	1	1		1	1
*Zoology 1, General -----	2	6	8	4	2	3	5	3
*Zoology 4, Animal Kingdom -----								
				19				18
Sophomore Year								
**Chemistry 15, Quantitative Analysis -----	2	6	8	4				
**Chemistry 35, 37, Elementary Organic -----	3		3	2	3		3	2
*Chemistry 36, 38, Elementary Organic Laboratory -----		4	4	2		4	4	2
**Pharmacy 21, 22, General -----	4	3	7	5	4	3	7	5
*Physics 10, 11, General -----	3	2	5	4	3	2	5	4
*Physiology 22, General -----					4	3	7	5
				17				18
Junior Year								
§Chemistry 53, Pharmaceutical Testing and Assaying -----					2	6	8	4
§Chemistry 153, Biological -----	4	4	8	5				
§Microbiology 1, Pharmaceutical -----	2	4	6	4				
§Microbiology 115, Serology and Immunology -----	2	5	7	4	2	4	6	4
§Pharmacognosy 51, 52, General -----	2	6	8	4	2	5	7	4
§Pharmacy 51, 52, Dispensing -----	1		1	1	2	6	8	4
§Pharmacy 61, History of Pharmacy -----								
§Pharmacy Administration 37, Fundamentals of Economics -----					3		3	3
				18				19
Senior Year (Required)								
Chemistry 111, 113, Chemistry of Medicinal Products -----	3		3	3	3		3	3
First Aid 1, Standard -----	1		1		3	4	7	4
Pharmacology 81, 82, General -----	3	4	7	4	2	3	5	3
Pharmacy 101, 102, Advanced Dispensing -----	2	3	5	3				
Pharmacy Administration 21, Accounting -----	1	3	4	2	3		3	3
Pharmacy Administration 62, Jurisprudence -----								5
Electives† -----				7				
				19				18
‡(Electives—Retail Major)								
Pharmacognosy 61, Entomology for Pharmacists -----	2	3	5	3				
Pharmacognosy 62, Animal Health Products or -----					3		3	3
Pharmacy 132, Cosmetics -----					2	3 ^{or}	5	3
Pharmacy 121, Hospital Pharmacy Administration -----	2		2	2				
or -----		or						
Pharmacy 81, Pharmacy Literature -----	2		2	2				
Pharmacy Administration 71, Management -----	2		2	2				
Pharmacy Administration 72, Drug Marketing -----					2		2	2
‡(Electives—Pre-Graduate Major)								
†English 3, 4, Composition and World Literature -----	3		3	3	3		3	3
or -----		or				or		
*Language 6, 7, Intermediate Scientific German -----	3		3	3	3		3	3
†Mathematics 20, 21, Calculus -----	3		3	3	3		3	3
‡(Electives—Special Cases)								
§Chemistry 99, Glassworking -----		3	3	1		3	3	1
§Chemistry 112, 114, Chemistry of Medicinal Products -----		4	4	2		4	4	2

† Instruction in these courses given by the College of Arts and Sciences.

‡ The electives must be approved by the Class Advisor and Dean.

* Courses, formerly given by the College of Arts and Sciences, not offered at Baltimore.

** Course not offered after 1960-61.

§ Course not offered after 1961-62.

FOUR YEAR CURRICULUM

SUMMARY OF HOURS AND CREDITS

Course	Didactic	Laboratory	Total	Credit hours
Freshman Year				
*Chemistry 1, 3	64	192	256	8
*English 1, 2	96		96	6
*Mathematics 10 or 15	48		48	3
*Mathematics 11 or 17	48		48	3
*Modern Language 1, 2 or 6, 7	96		96	6
**Pharmacy 1, 2	32		32	2
*Speech 1, 2	32		32	2
*Zoology 1, 4	64	144	208	7
Total	480	336	816	37
Sophomore Year				
**Chemistry 15	32	96	128	4
**Chemistry 35, 37	96		96	4
**Chemistry 36, 38		128	128	4
**Pharmacy 21, 22	128	96	224	10
*Physics 10, 11	96	64	160	8
**Physiology 22	64	48	112	5
Total	416	432	848	35
Junior Year				
§Chemistry 53	32	96	128	4
§Chemistry 153	64	64	128	5
§Microbiology 1	32	64	96	4
§Microbiology 115	32	64	96	4
§Pharmacognosy 51, 52	64	160	224	8
§Pharmacy 51, 52	64	192	256	8
§Pharmacy 61	16		16	1
§Pharmacy Administration 37	48		48	3
Total	352	640	992	37
Senior Year (Required)				
Chemistry 111, 113	96		96	6
First Aid	16		16	
Pharmacology 81, 82	96	128	224	8
Pharmacy 101, 102	64	96	160	6
Pharmacy Administration 21	16	48	64	2
Pharmacy Administration 62	48		48	3
Electives	224 [†]	160 [‡]	384 [¶]	12
Total	560	432	992	37
†(Electives—Retail Major)				
Pharmacognosy 61	32	48	80	3
Pharmacognosy 62	48		48	3
Pharmacy 132	32	48	80	3
Pharmacy 121	32		32	2
Pharmacy 81	32		32	2
Pharmacy Administration 71	32		32	2
Pharmacy Administration 72	32		32	2
‡(Electives—Pre-Graduate Major)				
†English 3, 4	96		96	6
Language 6, 7	96		96	6
†Mathematics 20, 21	96		96	6
¶(Electives—Special Cases)				
§Chemistry 99		96	96	2
§Chemistry 112, 114		128	128	4
SUMMARY				
Freshman Year	480	336	816	37
Sophomore Year	416	432	848	35
Junior Year	352	640	992	37
Senior Year	560	432	992	37
Total	1,808	1,840	3,648	146

†Instruction in these courses given by College of Arts and Science.

‡The electives must be approved by Class Advisor and Dean.

*Course formerly given by the College of Arts and Sciences no longer offered at Baltimore.

**Course not offered after 1960-61.

§Course not offered after 1961-62.

A minimum of 144 credits required for students entered prior to September, 1956 and 146 credits for those entering in September, 1956 and thereafter.

¶Average.

PROFESSIONAL PROGRAM OF FIVE YEAR CURRICULUM

COURSES, HOURS AND CREDITS

Title and Number of Course	First Semester				Second Semester			
	Hrs. Per Week				Hrs. Per Week			
	Didactic	Lab'y	Total	Credits	Didactic	Lab'y	Total	Credits
First Professional Year (Required)								
Anatomy 31, Mammalian Anatomy and Histology -----	2	6	8	4				
Pharmaceutical Chemistry 30, 32, Principles of Organic Chemistry -----	3	4	7	4	3	4	7	4
Pharmaceutical Chemistry 34, Quantitative Pharmaceutical Analysis -----					2	6	8	4
Pharmacy 31, Introduction to the Profession of Pharmacy -----	2		2	2				
Pharmacy 23, 34, Processes and Dosage Forms -----	3	3	6	4	3	3	6	4
Pharmacy 35, Professional Communications -----	3		3	3				
Pharmacy 38, History of Pharmacy -----	3				3		3	3
Pharmacy Administration 36, Accounting -----					2	3	5	3
				17				18
Second Professional Year (Required)								
First Aid 1, Standard -----	1		1					
Microbiology 41, Pharmaceutical Microbiology -----	2	4	6	4				
Microbiology 146, Serology, Immunology, Public Health and Parasitology -----					2	4	6	4
Pharmaceutical Chemistry 149, Principles of Biochemistry -----	4	4	8	5				
Pharmacognosy 41, 42, General Pharmacognosy -----	2	3	5	3	2	3	5	3
Pharmacy 43, 44, Pharmaceutical Technology -----	2	4	6	3	2	4	6	3
Physiology 142, General Physiology -----					3	6	9	5
†Electives -----				3-4				3-4
				18-19				18-19
†(Electives—Retail Major)								
Pharmacy Administration 41, Marketing -----	3		3	3				
Pharmacy Administration 42, Pharmacy Management I -----					2	3	5	3
†(Electives—Pre-Graduate)								
Mathematics 20, 21, Calculus -----	4		4	4	4		4	4
Third Professional Year (Required)								
Pharmacology 155, 156, General Pharmacology -----	3	3	6	4	4	3	7	5
Pharmacy 55, 56, Pharmaceutical Formulation Problems -----	1		1	1	1		1	1
or -----								
Pharmacy 151, Manufacturing Pharmacy -----	1	3	4	2				
Pharmacy 153, 154, Dispensing -----	2	3	5	3	2	3	5	3
Pharmacy Administration 51, 52, Pharmaceutical Jurisprudence -----	2		2	2	2		2	2
Pharmaceutical Chemistry 151, 152, Chemistry of Medicinal Products -----	3		3	3	3		3	3
†Electives -----				5				5
				18-19				19-18
†(Electives—Retail Major)								
Pharmacognosy 51, Entomology for Pharmacists -----	2	3	5	3	3		3	3
Pharmacognosy 52, Animal Health Products -----								
or -----								
Pharmacy 156, Cosmetics and Dermatological Preparations -----					2	3	5	3
Pharmacy Administration 53, 54, Pharmacy Management II, III -----	2		2	2	2		2	2
†(Electives—Hospital Major)								
Pharmacognosy 51, Entomology for Pharmacists -----	2	3	5	3				
Pharmacy 153, Hospital Pharmacy Administration -----	2		2	2				
Pharmacy 156, Cosmetics and Dermatological Preparations -----					2	3	5	3
Pharmacy 158, Orientation to Hospital Administration -----					2		2	2
†(Electives—Pre-Graduate Major)								
Chemistry 187, 189, Physical Chemistry -----	3		3	3	3		3	3
Chemistry 188, 190, Physical Chemistry Laboratory -----		6	6	2		6	6	2

† The electives must be approved by the Class Advisor and Dean.

School of Pharmacy

PROFESSIONAL PROGRAM OF FIVE YEAR CURRICULUM

SUMMARY OF HOURS AND CREDITS

Course	Didactic	Laboratory	Total	Credit hours
First Professional Year (Required)				
Anatomy 31	32	96	128	4
Pharmaceutical Chemistry 30, 32	96	128	224	8
Pharmaceutical Chemistry 34	32	96	128	4
Pharmacy 31	32		32	2
Pharmacy 33, 34	96	96	192	8
Pharmacy 35	48		48	3
Pharmacy 38	48		48	3
Pharmacy Administration 36	32	48	80	3
Total	416	464	880	35
Second Professional Year (Required)				
First Aid 1	16		16	
Microbiology 41	32	64	96	4
Microbiology 146	32	64	96	4
Pharmaceutical Chemistry 149	64	64	128	5
Pharmacognosy 41, 42	64	96	160	6
Pharmacy 43, 44	64	128	192	6
Physiology 142	48	96	144	5
†Electives	104†	24†	128†	6-8
Total	424	536	960	36-38
‡(Electives—Retail Major)				
Pharmacy Administration 41	48		48	3
Pharmacy Administration 42	32	48	80	3
(Electives—Pre-Graduate)				
Mathematics 20, 21	128		128	8
Third Year (Required)				
Pharmacology 155, 156	112	96	208	9
Pharmacy 55, 56	32		32	2
or				
Pharmacy 151	16	48	64	2
Pharmacy 153, 154	64	96	160	6
Pharmacy Administration 51, 52	64		64	4
Pharmaceutical Chemistry 151, 152	96		96	6
Electives	120†	120†	240†	10
Total	504	360	864	37
‡(Electives—Retail Major)				
Pharmacognosy 51	32	48	80	3
Pharmacognosy 52	48		48	3
or				
Pharmacy 156	32	48	80	3
Pharmacy Administration 53, 54	64		64	4
‡(Electives—Hospital Major)				
Pharmacognosy 51	32	48	80	3
Pharmacy 153	32		32	2
Pharmacy 155	32	48	80	3
Pharmacy 158	32		32	2
‡(Electives—Pre-Graduate)				
Chemistry 187, 189	96		96	6
Chemistry 188, 190		192	192	4
SUMMARY				
First Professional Year	416	464	880	35
Second Professional Year	424	536	960	36-38
Third Professional Year	504	360	864	37
Total	1344	1360	2704	108-110*

† Average.

‡ The electives must be approved by the Class Advisor and Dean.

* A minimum of 108 credits required for students selecting either the Retail Major Course or the Hospital Major Course. A minimum of 110 credits required for students selecting the Pre-Graduate Course.

Description of Courses[†]

FOUR YEAR CURRICULUM PHARMACEUTICAL CHEMISTRY

*1, 3. *General Inorganic Chemistry and Qualitative Analysis*—(4, 4)

Freshman year, two lectures, two laboratories.

A study of the metals and non-metals with emphasis on chemical theory and important generalizations. The laboratory work deals with fundamental principles, the preparation and purification of compounds, and the systematic qualitative analysis of the more common cations and anions.

*35, 37. *Elementary Organic Chemistry*—(2, 2)

Sophomore year, two lectures

(Miller and Bossle)

Prerequisite—Chemistry 1, 3. A study of the fundamentals of organic chemistry.

*36, 38. *Elementary Organic Laboratory*—(2, 2)

Sophomore year, one laboratory.

(Miller and Bossle.)

Prerequisite—Chemistry 35, 37 or current registration therein. A study of the general procedures used in organic laboratory.

‡15. *Quantitative Analysis*—(4)

Sophomore year, first semester, two lectures and two laboratories.

(Doorenbos and Lo)

Prerequisites—Chemistry 1, 3. A study of the gravimetric and volumetric procedures and theory, and their application to pharmaceutical analyses.

§53. *Pharmaceutical Testing and Assaying*—(4)

Junior year, second semester, two lectures and two laboratories.

(Zenker, Koch and Manion.)

Prerequisites—Chemistry 15, 35, 37, or concurrent registration therein. Quantitative methods applied to the chemical assay of crude drugs and of official preparations, with an introduction to instrumental methods.

§99. *Glassworking*—(1, 1)

Laboratory, senior year, either semester.

(Miller.)

Prerequisite—Consent of the instructor. Simple operations in the manipulation of glass, repair and construction apparatus.

*Courses, formerly given by the College of Arts and Sciences, not offered at Baltimore.

†Courses intended primarily for sophomores are numbered 1-49; for juniors and seniors 50-99; for advanced undergraduates and graduates 100-199; and for graduates only 200-399.

The semester hour, which is the unit of credit, is the equivalent of a subject pursued one period a week for one semester. A laboratory period is equivalent to one lecture or recitation period.

‡Course not offered after 1960-61.

§Course not offered after 1961-62.

For Graduates and Advanced Undergraduates

111, 113. *Chemistry of Medicinal Products*—(3, 3)

Senior year, three lectures.

(Doorenbos.)

Prerequisite—Chemistry 35, 37, 53. A survey of the structural relationships, the synthesis and chemical properties of medicinal products.

141, 143. *Advanced Organic Chemistry*—(2, 2)

Two lectures.

(Miller.)

Prerequisites—Chemistry 35, 36, 37, 38. An advanced study of the compounds of carbon.

144. *Advanced Organic Laboratory*—(2)

Two laboratories.

(Miller)

Prerequisite—Chemistry 37, 38 or equivalent. Laboratory work devoted to more complicated organic preparations.

146, 148. *Identification of Organic Compounds*—(2, 2)

One lecture, two laboratories.

(Miller and Doorenbos.)

Prerequisite—Chemistry 141, 143, or equivalent. The systematic identification of organic compounds.

*153. *Biological Chemistry*—(5)

Junior year, first semester, four lectures and one laboratory.

(Zenker, Koch and Manion.)

Prerequisites—Chemistry 35, 37. Lectures and laboratory exercises devoted to the composition of living organisms and the chemical and physical processes which occur during health and in disease.

187, 189. *Physical Chemistry*—(3, 3)

Three lectures.

(Klesper.)

Prerequisites—Chemistry 15, 35, 37, Physics 10, 11 and Mathematics 20, 21. A study of laws and theories of chemistry, including the gas laws, kinetic theory, liquids, solutions, elementary thermodynamics, thermo-chemistry, equilibrium, chemical kinetics and electro-chemistry.

188, 190. *Physical Chemistry*—(2, 2)

Two laboratories.

(Klesper.)

Prerequisites—Chemistry 187, 189 or may be taken simultaneously with Chemistry 187, 189. Quantitative experiments are performed which demonstrate physio-chemical principles, and acquaint the student with precision apparatus.

For Graduates

230. *Seminar*—(1)

Each semester.

Required of students majoring in pharmaceutical chemistry. Reports of progress and survey of recent developments in chemistry.

232. *Advanced Organic Synthesis*—(2)

Two laboratories.

(Miller.)

Prerequisite—Chemistry 144. Library and laboratory work designed to offer experience in the more difficult organic syntheses and in new techniques.

*Course not offered after 1961-1962.

University of Maryland

235. *Principles of Stereochemistry*—(2)

Two lectures.

(Miller.)

Prerequisite—Chemistry 141, 143. A study of the principles of stereochemistry of organic compounds.

242. *Heterocyclic Chemistry*—(2)

Two lectures.

(Doorenbos.)

Prerequisite—Chemistry 141, 143. A study of the chemistry and synthesis of heterocyclic compounds.

250. *Steroids*—(2)

Two lectures.

(Doorenbos.)

Prerequisite—Chemistry 141, 143. A study of the synthesis and structure determination of steroids and the application of modern chemical concepts to the chemistry of steroids.

252. *Alkaloids*—(2)

Two lectures.

(Miller.)

Prerequisite—Chemistry 141, 143. A study of the principles involved in structure determination, chemistry and synthesis of the major alkaloidal classes.

253, 254. *Advanced Chemistry of Medicinal Products*—(2, 2)

Two lectures.

(Doorenbos.)

Prerequisite—Chemistry 111, 113 and Pharmaceutical Chemistry 141, 143 or permission of the instructor. A study of structural relationships and basic principles concerned with the physical and chemical mechanisms of drug action, e.g., structure-activity relationships, physical properties and biological activity, cellular transport, drug, protein binding, biological receptors, lipid storage and physico-chemical mechanisms of drug action.

255. *Instrumental Methods of Analysis*—(2)

Either semester, two laboratories.

(Zenker.)

Prerequisite—Chemistry 187, 188, 189, 190 or equivalent.

271, 272. *Selected Topics in Physical Chemistry*—(2, 2)

Two lectures.

(Klesper.)

Prerequisite—Chemistry 189. A discussion of selected topics of particular interest in the pharmaceutical sciences, including colloids, surface chemistry, kinetics, absorption spectroscopy, dipole moments and the behavior of molecules in electric and magnetic fields.

274. *Advanced Physical Chemistry Laboratory*—(1)

One laboratory.

(Klesper.)

Prerequisite—Chemistry 190. Selected experiments which are necessary for, and a part of, a larger research effort.

281. *Pharmaceutical Biochemistry*—(2)

Two lectures.

(Zenker.)

Prerequisite—Pharmaceutical Chemistry 149. A discussion of the relationships between drugs and enzymes, with emphasis on drug action at the enzymatic level and on drug metabolism.

282. *Pharmaceutical Biochemistry Laboratory*—(2)

Two laboratories.

(Zenker.)

Prerequisite—Pharmaceutical Chemistry 281 or permission of the instructor. Lab-

School of Pharmacy

oratory experiments designed to illustrate the use of modern techniques and metabolic methods in the study of drug action and drug metabolism.

399. *Research in Pharmaceutical Chemistry*

Credit determined by the amount and quality of work performed.

(Staff.)

ENGLISH

*1, 2. *Survey and Composition*—(3, 3)

Freshman year, three lectures.

Prerequisite—Four units of high school English. A study of style, syntax, spelling and punctuation, combined with a historical study of English and American literature of the nineteenth and twentieth centuries. Written themes, book reviews and exercises.

3, 4. *Composition and World Literature*—(3, 3)

Elective, three lectures.

(Ballman.)

Prerequisite—English 1, 2. Practice in composition. An introduction to world literature, foreign classics being read in translation.

SPEECH

*1, 2. *Public Speaking*—(1, 1)

Freshman year, one lecture.

The preparation and delivery of short original speeches; outside readings; reports, etc.

FIRST AID

1. *Standard First Aid Course*

Senior year, first semester, one lecture, one demonstration. Mr. Gregson, instructor from the Baltimore Chapter of the American Red Cross.

MATHEMATICS

*0. *Basic Mathematics*—(0)

Freshman year, first semester, three lectures.

Required of students whose curriculum calls for Math 10 and who fail the qualifying examination for this course. The fundamental principles of algebra.

*10. *Algebra*—(3)

Freshman year, first and second semesters, three lectures.

Prerequisite—one unit of algebra. Fundamental operations, factoring, fractions, linear equations, exponents and radicals, logarithms, quadratic equations, variation, binomial theorem, and theory of equations.

*11. *Trigonometry and Analytic Geometry*—(3)

Freshman year, second semester, three lectures.

Prerequisite—Mathematics 10 or 15. Required of those students who do not offer one-half unit of trigonometry. Trigonometric functions, identities, the radian and mil, graphs, addition formulas, solution of triangles, coordinates, locus problems, the straight line and circle, conic sections and graphs.

*Course, formerly given by the College of Arts and Sciences, no longer offered at Baltimore.

University of Maryland

*15. *College Algebra*—(3)

Freshman year, second semester, three lectures.

Prerequisite—High school algebra completed. Fundamental operations, variation, functions and graphs, quadratic equations, theory of equation, binomial theorem, complex numbers, logarithms, determinants and progressions.

*17. *Analytic Geometry*—(3)

Prerequisite—High school trigonometry and Mathematics 15. Coordinates, locus problems, the straight line and circle, graphs, transformation of coordinates, conic sections, parametric equations, transcendental equations, and solid analytic geometry.

20, 21. *Calculus*—(3, 3)

Three lectures. Available only to seniors in 4-year curriculum. (Dean)

Prerequisite—Mathematics 15 and 17 and approval of instructor. Limits, derivatives, differentials, maxima and minima, curve sketching, rates, curvature, kinematics, integration, geometric and physical applications on integration, partial derivatives, space geometry, multiple integrals, infinite series and differential equations.

For Graduates and Advanced Undergraduates

Math. 130. Probability. (3)

Freshman year, first semester, three lectures.

First semester. Prerequisite, Math. 21 or equivalent. Combinatory analysis, total, compound, and inverse probability, continuous distributions, theorems of Bernoulli and Laplace, theory of errors. (Staff.)

Math. 132 Mathematical Statistics. (3)

Second semester. Prerequisite, Math. 21 or equivalent. Frequency distributions and their parameters, multivariate analysis and correlation, theory of sampling, analysis of variance, statistical inference. (Staff.)

MICROBIOLOGY

†1. *Pharmaceutical Microbiology*—(4)

Junior year, first semester, two lectures, two laboratories. (Shay and Becker.)

Introduction to general microbiology with special emphasis on the study of pathogenic microorganism, including the public health aspects of the prevention and control of communicable diseases.

For Graduates and Advanced Undergraduates

†115. *Serology and Immunology*—(4)

Junior year, second semester, two lectures, two laboratories. (Shay and Becker.)

Prerequisites—Microbiology 1. A study of the principles of immunity, including the preparation and use of biological products employed in the prevention and treatment of infectious diseases.

*Course, formerly given by the College of Arts and Sciences, no longer offered at Baltimore.

†Course not offered after 1961-62.

For Graduates

200, 201. *Chemotherapy*—(1, 1)

One lecture. (Given in alternate years.)

(Shay.)

A study of the chemistry, toxicity, pharmacology and therapeutic value of drugs employed in the treatment of parasitic diseases.

202, 203. *Reagents and Media*—(1, 1)

One lecture. (Given in alternate years.)

(Shay.)

A study of the methods of preparation and use of microbiological reagents and media.

210. *Special Problems in Microbiology*

A laboratory course on selected problems in microbiology. Credit determined by the amount and quality of work performed.

(Shay.)

211. *Public Health*—(1-2)

One lecture.

(Shay.)

Prerequisite—Microbiology 1, 115. Lectures and discussions on the organization and administration of state and municipal health departments and private health agencies. The courses will also include a study of laboratory methods.

399. *Research in Microbiology*

Credit determined by the amount of work performed.

(Shay.)

MODERN LANGUAGES

*1, 2 *Elementary French*—(3, 3)

Freshman year, three lectures.

Students who offer two units in French for entrance, but whose preparation is not adequate for second-year French, receive half credit for this course. Elements of grammar, composition, pronunciation and translation.

*1, 2. *Elementary German*—(3, 3)

Freshman year, three lectures.

Students who offer two units in German for entrance, but whose preparation is not adequate for second-year German receive half credit for this course. Elements of grammar, composition, pronunciation and translation.

Students will be assigned to one of the two languages by the department. The assignment will ordinarily be made on the basis of the student's previous training.

Six semester hours College credit in Spanish will be accepted as satisfying the Modern Language requirement.

*6, 7. *Intermediate Scientific French*—(3, 3)

Three lectures.

Prerequisite—French 1 and 2 or equivalent. Rapid grammar review, exercises in pronunciation, reading of scientific texts.

*6, 7. *Intermediate Scientific German*—(3, 3)

Three lectures.

Prerequisite—German 1 and 2 or equivalent. Review of grammar and reading of scientific texts.

*Course, formerly given by the College of Arts and Sciences, no longer offered at Baltimore.

†Course not offered after 1961-62.

PHARMACOGNOSY

†51. *Pharmacognosy, General*—(4)

Junior year, first semester, two lectures and two laboratories. (Slama and Kokoski.)

Prerequisites—Zoology 4, Chemistry 35, 36, 37, 38. A study of the cultivation, collection, and commerce of drugs of animal and vegetable origin with special emphasis on the physical, microscopical, and chemical characteristics used in their identification and in the detection of adulteration.

†52. *Pharmacognosy, General*—(4)

Junior year, second semester, two lectures and two laboratories. (Slama and Kokoski.)

Prerequisites—Zoology 4; Chemistry 35, 36, 37, 38; Pharmacognosy 51. A continuation of Pharmacognosy 51 with instruction covering antibiotics, allergy-producing pollens, insecticides, fungicides, rodenticides, weedicides, etc.

61. *Pharmacognosy. Entomology for Pharmacists*—(3)

Senior year, first semester, two lectures, and on laboratory. (Slama and Kokoski.)

Prerequisites—Zoology 4; Chemistry 35, 36, 37, 38; Pharmacognosy 51, 52. A study of the principal types of pests commonly found in the household and in the industries, including several which attack farm and garden crops; their recognition, life history, habits, and methods of control.

62. *Pharmacognosy. Animal Health Products*—(3)

Senior year, second semester, three lectures. (Slama.)

Prerequisites—Zoology 4; Physiology 22; Microbiology 1, 115; Pharmacology 81. A study of the principal therapeutic agents that are used in the treatment and prevention of the more important animal diseases.

For Graduates and Advanced Undergraduates

101, 102. *Taxonomy of the Higher Plants*—(2, 2)

One lecture and one laboratory. Given in alternate years. (Slama.)

Prerequisite—Pharmacognosy 51, 52. A study of the kinds of seed plants and ferns, their classifications, and field work on local flora. Instruction will be given in the preparation of an herbarium.

111, 113. *Plant Anatomy*—(2, 2)

Two lectures a week. (Slama.)

Prerequisites—Pharmacognosy 51, 52.

112, 114. *Plant Anatomy*—(2, 2)

Two laboratory periods a week. (Slama.)

Prerequisites—Pharmacognosy 51, 52, Pharmacognosy 111, 113. Laboratory work covering advanced plant anatomy with special emphasis placed on the structure of roots, stems, and leaves of vascular plants.

For Graduates

201, 202. *Advanced Study of Vegetable Powders*—(4, 4)

Two lectures and two laboratories. (Slama.)

Prerequisites—Pharmacognosy 111, 112. A study of powdered vegetable drugs and spices from the structural and microchemical standpoints, including practice in identification and detection of adulterants. Given in alternate years.

†Course not offered after 1961-62.

211, 212. *Advanced Pharmacognosy*—(4, 4)

Two lectures and two laboratories.

(Slama.)

Prerequisites—Pharmacognosy 111, 112. A study of many crude drugs not ordinarily studied in other pharmacognosy courses. Special attention will be given to practical problems and to the identification and detection of adulterants.

399. *Research in Pharmacognosy*

Credit according to the amount and quality of work performed.

(Slama.)

PHARMACOLOGY

81, 82. *Pharmacology, General*—(4, 4)

Senior year, three lectures and one laboratory.

(Ichniowski, Diamond and Heifetz.)

Prerequisite—Physiology 22, Biological Chemistry 153. A study of the pharmacology, toxicology and therapeutic uses of medicinal substances, including methods of biological assay, with special reference to the drugs and preparations of the United States Pharmacopoeia and the National Formulary.

For Graduates and Advanced Undergraduates

111. *Official Methods of Biological Assay*—(4)

Two lectures and two laboratories.

(Ichniowski)

Prerequisite—Pharmacology 81, 82. A study of the methods of biological assay official in the United States Pharmacopoeia and the National Formulary.

For Graduates

201, 202. *Methods of Biological Assay*—(4, 4)

Laboratory and conferences, first and second semesters.

(Ichniowski.)

Prerequisite—Pharmacology 111. Offered in alternate years.

211, 212. *Special Studies in Pharmacodynamics*—(4, 4)

Laboratory and conferences, first and second semesters.

(Ichniowski.)

Prerequisite—Pharmacology 81 and 82 and the approval of the instructor. Offered in alternate years.

221, 222. *Special Studies in Biological Assay Methods*—(2-4), (2-4)

Credit according to the amount of work undertaken after consultation with the instructor. Conferences and laboratory work.

(Ichniowski.)

Prerequisite—Pharmacology 111, 201, 202. Special problems in the development of biological assay methods and comparative standards.

399. *Research in Pharmacology*

Properly qualified students may arrange with the instructor for credit and hours.

(Ichniowski.)

PHARMACY

†1, 2. *Pharmacy Orientation*—(1, 1)

Freshman year, one lecture.

(Levine.)

An introduction to pharmacy for the beginning student. The course will include the various subject matter that a pharmacy student will undertake as well as the opportunities in pharmacy. Guest lecturers will be invited from the various fields of pharmacy.

University of Maryland

†21, 22. *Pharmacy, General*—(5, 5)

Sophomore year, four lectures and one laboratory. (Levine, Becker, S. and Becker, J.)

Prerequisite—Pharmacy 1, 2 or may be taken simultaneously with Pharmacy 1, 2. A study of all theory of pharmaceutical manipulations, including mathematical calculations, and the practical application of the theory to the manufacture of galenical preparations.

‡51, 52. *Pharmacy, Dispensing*—(4, 4)

Junior year, two lectures and two laboratories. (Shangraw, Patel and Richman.)

Prerequisites—Pharmacy 21, 22. A study of the compounding and dispensing of prescriptions.

‡61. *History of Pharmacy*—(1)

Junior year, first semester, one lecture. (Shangraw)

A study of the history of pharmacy from its beginning, with special emphasis on the history of American Pharmacy.

81. *Pharmacy Literature*—(2)

Senior year, first semester, two lectures. (Levine.)

A study of important periodicals and currently published papers concerned with subjects of interest to pharmacists.

For Advanced Undergraduates and Graduates

101, 102. *Advanced Dispensing Pharmacy*—(3, 3)

Senior year, two lectures and one laboratory. (Allen, Patel, and Cragg.)

Prerequisites—Pharmacy 21, 22, 51, 52. A study of the compounding of new medicinal ingredients and dispensing aids used in modern professional pharmacy, including the preparation of some important classes of pharmaceuticals on a commercial scale.

121. *Hospital Pharmacy Administration*—(2)

Senior year, first semester, two lectures. (Purdum.)

A study of hospital pharmacy practice and administration.

132. *Cosmetics*—(3)

Senior year, second semester, two lectures and one laboratory. (Allen and Marlowe.)

Prerequisites—Pharmacy 21, 22, 51, 52, and 101. A study of the composition and manufacture of cosmetic preparations including laboratory work in the formulation of these products.

For Graduates

201, 202. *Manufacturing Pharmacy*—(3, 3)

Three lectures. Given in alternate years. (Shangraw.)

Prerequisites—Pharmacy 101, 102. A study of manufacturing processes, control procedures and equipment employed in the manufacture of pharmaceuticals on a commercial scale, including new drug applications and the Federal Food, Drug and Cosmetic Act.

†Course not offered after 1960-61.

‡Course not offered after 1961-62.

School of Pharmacy

203, 204. *Manufacturing Pharmacy*—(2, 2)

Two laboratories.

(Shangraw.)

Prerequisite—201, 202, or may be taken simultaneously with Pharmacy 201, 202. Laboratory work dealing with the preparation of useful and important pharmaceuticals in large quantities.

207, 208. *Physical Pharmacy*—(2, 2)

Two lectures a week.

(Shangraw.)

Prerequisites—Physical Chemistry 187, 188, 189, 190. A study of pharmaceutical systems utilizing the fundamentals of physical chemistry.

211, 212. *Survey of Pharmaceutical Literature*—(1, 1)

One lecture. Given in alternate years.

(Allen.)

Lectures and topics on the literature pertaining to pharmacy, with special reference to the origin and development of the works of drug standards and the pharmaceutical periodicals.

215, 216. *Product Development*—(2, 2)

Two laboratories.

(Allen.)

Prerequisites—Pharmacy 132, 201, 202, 203, 204. A study of the development of new pharmaceutical preparations and cosmetics suitable for marketing.

221, 222. *History of Pharmacy*—(2, 2)

Two lectures.

(Purdum.)

Lectures and assignments on the development of pharmacy in America and the principal countries of Europe. Given in alternate years.

230. *Pharmaceutical Seminar*—(1)

Each semester.

(Allen.)

Required of students majoring in pharmacy. Reports of progress in research and surveys of recent developments in pharmacy.

231, 232. *Special Problems in Pharmaceutical Technology*—(2, 2)

Two laboratories.

(Allen and Purdum.)

A study of technical problems in the stabilization and preservation of pharmaceuticals and the various methods of compounding special prescriptions.

399. *Research in Pharmacy*

Credit and hours to be arranged.

(Foss, Purdum, Allen, and Shangraw.)

PHARMACY ADMINISTRATION

21. *Accounting*—(2)

Senior year, first semester, one lecture and one laboratory.

(Leavitt.)

Prerequisite—Pharmacy Administration 37. The analysis of financial and operating statements with a study of the fundamental principles of accounting, including practice in bookkeeping.

†37. *Fundamentals of Economics*—(3)

Junior year, second semester, three lectures.

(Leavitt.)

A study of the general fundamentals of Economics—production, exchange, distribution and consumption of wealth, together with methods of financing, government and the consideration of economic systems.

†Course not offered after 1961-62.

University of Maryland

62. *Jurisprudence*—(3)

Senior year, second semester, three lectures.

(Kaufman.)

Fundamentals of law of importance to pharmacists; Federal and State Laws and Regulations pertaining to the sale of drugs, narcotics, poisons, cosmetics and pharmaceutical preparations. Law of Contracts, Negotiable Instruments, Sales, Agency and Partnerships.

71. *Management*—(2)

Senior year, first semester, two lectures.

(Leavitt.)

Prerequisite—Pharmacy Administration 37. A study of the business problems arising in the operation of a retail pharmacy, including ownership organization, financing, leasing, insurance, purchasing, pricing, code marking and control of inventory.

72. *Drug Marketing*—(2)

Senior year, second semester, two lectures.

Prerequisite—Pharmacy Administration 37. A study of marketing, marketing research, advertising, selling and salesmanship, merchandising, channels of distribution, wholesaling, retailing and personnel management.

PHYSICS

*10, 11. *General Physics*—(4, 4)

Sophomore year, three lectures, one laboratory.

(Estabrook and Hooper.)

Prerequisites—Mathematics 10, 11 or 15, 17. A study of the principles of mechanics, heat, wave motion, sound, light and electricity.

For Graduates and Advanced Undergraduates

*104, 105. *Electricity and Magnetism*—(3, 3)

Two lectures, one laboratory.

(Estabrook.)

Prerequisites—Physics 10, 11 and Mathematics 20, 21. Given according to demand.

*126. *Kinetic Theory of Gases*—(3)

Three lectures a week.

Prerequisites—Mathematics 21, and Physical Chemistry 189 and 190. Given according to demand.

(Estabrook.)

For Graduates

*200, 201. *Introduction to Theoretical Physics*—(5, 5)

Five lectures.

(Estabrook.)

Prerequisites—Advanced standing in Physics. Given according to demand.

PHYSIOLOGY

†22. *Physiology, General*—(5)

Sophomore year, second semester, three lectures, two laboratories.

(Costello and Becker.)

Prerequisite—Zoology 1, 4. A course in the fundamentals of human physiology, including neurophysiology, the heart and circulation, respiration, digestion, the kidney,

*Course, formerly given by Arts and Sciences, no longer offered at Baltimore.

†Course not offered after 1960-61.

School of Pharmacy

endocrine glands, muscle physiology, structure and permeability of the plasma membrane, and metabolism.

For Graduates

245. *Cellular Physiology and Cytogenetics*—(3)

First semester, three lectures.

(Costello.)

Prerequisites—Pharmaceutical Chemistry 149, Physiology 142. Consent of instructor.

The lectures will relate to the physical and chemical properties of protoplasm to the functional problems of the plasma membrane, cytoplasm, golgi apparatus, microsomes, nucleus, mitochondrial structure and their contributions to the integrated cellular activity. The physical and chemical phenomena of cell division and inheritance will be discussed.

246. *Radioisotope Technique*—(3)

Second semester, one lecture and two laboratories.

(Costello.)

Prerequisites—Consent of instructor. A course concerned with the practical use of isotopes particularly as tracers in metabolic investigations.

399. *Research in Physiology*

Credit determined by the amount and quality of work performed.

(Costello.)

ZOOLOGY

*1.—*Zoology, General*—(4)

Freshman year, first semester, two lectures and two laboratories.

This course deals with basic principles of animal life and uses a study of the anatomy and physiology of the vertebrates to demonstrate these principles.

*4. *Zoology, Animal Kingdom*—(3)

Freshman year, second semester, two lectures and one laboratory.

A survey of the animal kingdom with special emphasis on parasites, insects and other forms that have special economic interrelationships with man.

Both courses in zoology are intended to be practical in nature and act as a firm foundation for later required courses.

*Course, formerly given by the College of Arts and Sciences, no longer offered at Baltimore.

University of Maryland

phasis is placed upon official and non-official chemical tests used in the identification of drugs and their constituents.

Pharmacy 43, 44—Pharmaceutical Technology. (3, 3)

Two lectures, one laboratory and one recitation.

Prerequisites—Pharmacy 31, 33 and 34. The physical-chemical principles involved in pharmaceutical systems and the application of this knowledge to the development, preparation and packaging of medicinal formulations.

Pharmacy Administration 41—Drug Marketing. (3)

Three lectures.

Prerequisite—Economics 37 or its equivalent. This is an introductory course in the field of marketing with special emphasis on the marketing of drug products. Its purpose is to give a general understanding and appreciation of the forces operating, institutions employed, and methods followed in marketing drug products, natural products, services, and manufactured goods.

Pharmacy Administration 42—Pharmacy Management I. (3)

Two lectures and one laboratory.

Prerequisite—Pharmacy Administration 41. A study of store arrangement, window and interior display, advertising, merchandising, selling and salesmanship, and public and professional relations.

Physiology 142—General Physiology. (5)

Three lectures and two laboratories.

Prerequisite—Anatomy 31. A course in the fundamentals of mammalian physiology including the structure and permeability of the cell membrane, neuro-physiology, muscle physiology, the circulatory system, the respiratory system, the digestive system, the excretory system, endocrinology, metabolism, and the special senses.

ROLL OF STUDENTS, SESSION 1961-62

Graduate Students †

Becker, John W.	Maryland
*Becker, Stanley L.	Maryland
Bednarczyk, Leonard R.	Maryland
Beech, John A.	England
Block, Ronald Lee	District of Columbia
Bossle, Paul C.	Louisiana
DeSchepper, Paul J.	Belgium
Diamond, Louis	Maryland
Dorn, Conrad P., Jr.	Maryland
Fishbein, William N.	Maryland
Fox, Chester D.	New York
Fried, Irving M.	Pennsylvania
Goldsmith, Robert H.	Maryland
*Gordon, Gerald S.	Maryland
Hammel, Claire L.	District of Columbia
Havranek, Robert E.	New York
Henderson, Edward G.	Connecticut
Hockley, Laura	Maryland
Kilchenstein, Michael W.	Maryland
Koch, Stanley A.	District of Columbia
‡Kokoski, Robert	Maryland
Konopik, Barbara H.	Maryland
Kopcho, Michael J.	New Jersey
Lesko, Stephen A., Jr.	Pennsylvania
Levine, Phillip J.	Rhode Island
*Manion, Marian I.	Philippine Islands
Marlowe, Edward	New York
McMillion, C. Robert	West Virginia
Nakagawa, Masako	Japan
Patel, Vithalbhai C.	India
Reier, George E.	Maryland
Richman, Morton D.	Maryland
Ringe, Ingrid	Germany
*Rivera-Martinez, Rafael	Puerto Rico
Sacks, Sylvan	Maryland
Schmukler, Morton	Maryland
Scott, Kenneth R.	Maryland
Shroff, Arvin P.	India
Thomas, George H.	Ohio
Tinney, Francis J.	New York
Tocci, Paul M.	New York
Wagner, Frederick H.	Maryland
Walkling, Walter D.	Maryland
Wang, Theodore H. T.	China
Warfield, Albert H.	Maryland
Warthen, John D., Jr.	Maryland

*Did not attend entire session

†Registered in Graduate School

‡Second Semester only

University of Maryland

Senior Class

Amernick, Harmond H.	Maryland
Augsburger, Larry L.	Maryland
Becker, Edward P.	Maryland
Blaustein, Arnold L.	Maryland
Block, Lawrence H.	Maryland
Boatman, Ernest A.	Maryland
Calas, Andre T.	Maryland
Clinger, Richard G.	Pennsylvania
Contrino, Gabriel M.	Maryland
Gandel, Stephen	Maryland
Gibbon, Nancy L.	Maryland
Grubb, John E.	Maryland
Gubinsky, Louis	Maryland
Hamet, Sydney H.	Maryland
Harrison, Gordon M.	Maryland
Jablon, Paul A.	Maryland
Kantorow, Bennett R.	Maryland
Kantorski, Robert R.	Maryland
Katz, Albert	Maryland
Kempler, Jerold A.	Maryland
Kern, Louis R., Jr.	Maryland
Konrad, James G.	Maryland
Lauer, Stephen L.	Maryland
Levitt, Kelvin R.	Maryland
Mackay, Walter P.	Maryland
Mackowiak, Frank J.	Maryland
Maggitti, Ronald F.	Maryland
McKenna, Richard S.	Maryland
Plummer, Robert M.	Maryland
Pristoop, Allan S.	Maryland
Rosen, Leon	Maryland
Rosenstein, Sol	Maryland
Roth, Edward B.	Maryland
Samson, Irwin L.	Maryland
Sandler, Charles A.	Maryland
Sermuksnis, Milda I.	Maryland
Serpick, David Y.	Maryland
Smith, Dennis B.	Maryland
Sophocleus, Theodore J.	Maryland
Sugarman, Henry	Maryland
Wagner, Herbert C.	Maryland
Wankel, Richard A.	Maryland
Wolff, Donald W.	Maryland

Junior Class

Abel, Walter H.	Maryland
Abramovitz, Marjorie S.	Maryland
Antwarg, Alvin G.	Maryland
Baker, Jeanne A.	Maryland
Banks, David E.	Maryland
Barron, David D.	Maryland

Batt, William H.	Maryland
Benson, Michael T.	Maryland
Blake, David A.	Maryland
Bradenbaugh, Don L.	Maryland
Brownstein, Marshall P.	Maryland
Caplan, Yale H.	Maryland
Caple, Arthur N.	Maryland
Chang, Gloria	Maryland
Cohen, Michael D.	Maryland
*Conrad, John W.	Maryland
Cornias, William N.	Maryland
*Courpas, Anthony L.	Maryland
Fader, John F.	Maryland
Foster, Barbara A.	California
Friedel, Stuart L.	Maryland
Henderson, Robert W.	Maryland
Heyman, Irwin A.	Maryland
Hopkins, Ronald M.	Maryland
Jacobs, M. Neal	Maryland
Kadish, Aaron C.	Maryland
Keller, Thomas H., Jr.	Maryland
Kuchinsky, Victoria W.	Maryland
*Lebowitz, Donald L.	Maryland
Levi, Henry M.	Maryland
Levin, Stephen P.	Maryland
Lund, Robert E.	Maryland
*Luskin, Robert S.	Maryland
Mendelsohn, James F.	Maryland
*Neiner, Carol M.	Maryland
Newman, Jerome	Maryland
Pariser, Joseph	Maryland
Perzynski, Paul R.	Maryland
Pfann, George A.	Maryland
Pilson, Robert M., Jr.	Maryland
Price, Chester L.	Maryland
†Rachanow, Gerald	Maryland
Reinke, Budne C.	Maryland
Ritchie, James R.	Maryland
Sapperstein, Alan E.	Maryland
Scholtz, Frank W.	Maryland
Schultz, Lawrence M.	Maryland
*Schwartzman, Allan M.	Maryland
Shaner, Daniel S.	Maryland
Shargel, Leon D.	Maryland
Shaver, Carole F.	Maryland
Sobczak, Valentine R.	Maryland
Sober, Julian N.	Maryland
Spak, Allen	Maryland
Tristani, Ettore M.	Maryland
Ullman, Kenneth C.	Maryland
Welsh, James J., Jr.	Maryland

*First Semester only

†Second Semester only

University of Maryland

Wilson, John W.	Maryland
Winakur, Stuart	Maryland
Woods, Dennis S.	Maryland
Yee, Susan	Maryland
Zimmer, Reid A.	Maryland

First Professional Year

DelCastilho, Ronald E.	Maryland
Wynn, Richard L.	Maryland

SCHOOL OF PHARMACY AT COLLEGE PARK

Sophomore Class

Ackerman, Neil R.	Maryland
Adams, Patricia M.	Maryland
Alatzas, George T.	Maryland
Boon, David D.	Maryland
Brundelre, Robert	Maryland
Catlett, Leon R.	Maryland
Cavoures, James A.	Maryland
†Conrad, John	Maryland
Csyk, Richard L.	Maryland
*Dinsmore, Bill G.	Maryland
Dolecek, Gayle R.	District of Columbia
*Doolan, Kenneth F.	Maryland
Dunn, Carolyn J.	Maryland
Elliott, Ruth E.	Maryland
Elliott, William R.	Maryland
Frangakis, Mina S.	Maryland
Gamerman, Marvin I.	Maryland
*Gibbs, Gary L.	Maryland
Glover, Wayne A.	Maryland
Goldberg, Marvin	Maryland
Goldman, William I.	Maryland
Goldstein, Mark N.	Maryland
*Gribble, Joann	District of Columbia
Gull, Michael	Maryland
Heer, Roger G.	Maryland
Henderson, Robert L.	Maryland
Hoffman, Robert W.	Maryland
Hoffman, Ronald H.	Maryland
Hribar, Neal E.	Maryland
†Hughes, Edward L.	Maryland
Kirk, Edward W.	Maryland
*Kobin, David A.	Maryland
*Kozak, Adrian S.	Maryland
Kroopnick, Robert B.	Maryland
*Lambdin, James R.	Maryland

*First Semester only

†Second Semester only

‡Libowitz, Suzanne	Maryland
Lindenbaum, Ronald L.	Maryland
*Lovera, Madeline C.	Maryland
Martin, Lawrence L.	Maryland
Martin, Wallace	Maryland
Matthews, Roberta	Maryland
‡Meyer, Howard B.	Maryland
Miller, Harris L.	Maryland
Moore, Ronald S.	Maryland
Needle, Stephen	Maryland
‡Neiner, Carol	Maryland
Potter, Buddy M.	Maryland
Quick, Stephen B.	Virginia
Rayman, Marsha J.	District of Columbia
Santell, Frederica A.	Maryland
Schutz, Charles J.	Maryland
Seechuk, William	Maryland
‡Seff, Gerald L.	Maryland
Spuras, Jenina D.	Maryland
Tannebaum, Stanley B.	Maryland
Taylor, Charles D.	Maryland
Walsh, Michael J.	Maryland
Williams, Cornelius B.	Maryland
‡Williams, Matt E.	Maryland
*Wolfson, Israel D.	Maryland

SCHOOL OF PHARMACY AT COLLEGE PARK

Freshman Class

Alpert, Charles	Maryland
‡Altgenug, Gerald	Maryland
Baer, Carol	Maryland
Bloom, Barry	Maryland
Blum, Jerold	Maryland
Bush, Francis	District of Columbia
*Cohen, David	Maryland
Cohen, Michael	Maryland
Cronin, Dennis R.	Maryland
Daugherty, Margaret L.	Maryland
Dickerman, Jorge	Honduras
*Donahue, Cecilia	Maryland
Donnelly, John	Maryland
English, David	District of Columbia
Erdman, Sheldon	Maryland
Fine, Norman	Maryland
Fischer, Bernard	Maryland
Fleischer, Charles	Maryland
Folus, Gary	Maryland
Gandel, Larry	Maryland

*First Semester only

‡Second Semester only

University of Maryland

Gordon, David	Maryland
*Gorrell, David J.	Maryland
Greek, David C.	Connecticut
*Greenberg, Henry I.	Maryland
Heer, Ronald W.	Maryland
Hess, Gary	Maryland
Hill, Carol Jane	Maryland
*Jacobson, Robert A.	Maryland
Janofsky, Stephen L.	Maryland
*Jaskowitz, Theodore J.	Maryland
Jones, Christina M.	Maryland
*Kavanagh, Mildred A.	Maryland
Keefer, David M.	Maryland
*Kessler, Stanton C.	Maryland
Lane, Douglas V.	Maryland
*Langley, Janet E.	Maryland
Lazarus, Marc R.	Maryland
Lehman, Allan G.	Maryland
Lessing, Melvin	Maryland
Levay, Francis	Maryland
MacConney, Charles S.	Maryland
McCabe, Stanley B.	Maryland
Morton, Jacquelin G.	Maryland
*Musotto, Domenic J.	Maryland
Naughton, Charles E.	Maryland
Neiner, Joan M.	Maryland
*Ormrod, Roland S.	Maryland
Owens, James G.	Louisiana
Pawelczyk, Thomas W.	Maryland
Pincus, Jack H.	Maryland
Pletka, George J.	Maryland
Polievka, Frank J.	District of Columbia
Porter, Irving C.	Maryland
†Rehwaladt, Don C.	Maryland
‡Sexton, Ronald A.	Maryland
Sherman, Howard	Maryland
Shure, Joanna C.	Maryland
Statter, William	Maryland
*Sugarman, Sylvan	Maryland
Sweeney, Dennis J.	District of Columbia
Telleys, Ronald	Virginia
Theil, Kenneth W., Jr.	Maryland
*Thomas, Susan M.	New York
Tims, John M.	Maryland
Trinkley, Kenneth P.	Maryland
*Webster, Bert H.	District of Columbia
Weiner, Alan	Maryland
Weiner, Herbert R.	Maryland
Weiner, Myron	Maryland
Welsh, Patrick G.	Maryland
Wilson, Thomas W.	Maryland

*First Semester only

‡Second Semester only

ROLL OF GRADUATES, JUNE 10, 1961

Doctor of Philosophy

C. Richard Tamorria.....District of Columbia

Master of Science

Conrad P. Dorn, Jr.....Maryland

George E. Reier.....Maryland

Alvaro F. Zeledon.....Costa Rica

Bachelor of Science in Pharmacy

Arnold Leroy Amass.....Maryland

Lawrence Yale Block.....Maryland

Kenneth Bennett Bozman.....Maryland

Frank Felix Cwynar, Jr.....Maryland

Louis Diamond.....Maryland

Vincent Robert DiPaula.....Maryland

Helen Elaine Evert.....Maryland

Gerald Stanford Gordon.....Maryland

Elliott Greenblatt.....Maryland

Norton Joel Crossblatt.....Maryland

Harry Hamet.....Maryland

William J. Heinrich.....Maryland

George Herman Huber.....Maryland

Marvin Stanley Kushnick.....Maryland

June Eng Lee.....Maryland

Beryl Lerner.....Maryland

David Gerald Levin.....Maryland

Constantine Nick Maschas.....Maryland

Douglas Wells McNeill.....Maryland

Harvey Donaldson Reisenweber.....Maryland

Zoe Carroll Robinson.....Maryland

Nancy Carol Sappe.....Maryland

Irvin Silen.....Maryland

Martin Joseph Sopher.....Maryland

Janice Rae Stank.....Maryland

Robert Benjamin Stiekman.....Maryland

Peyton Orenzo Stime.....Maryland

James Patrick Struntz.....Maryland

William Tabak.....Maryland

Frank Joseph Tamberino.....Maryland

Vito Tinelli, Jr.....Maryland

Walter Douglas Walkling.....Maryland

Phillip Paul Weiner.....Maryland

Irvin Yospa.....Maryland

Warren Gerald Zerwitz.....Maryland

Honors (1960-61)

Gold Medal for General Excellence.....Walter Douglas Walkling

William Simon Memorial Prize.....Walter Douglas Walkling

Andrew G. DuMez Medal.....Vito Tinelli, Jr.

University of Maryland

L. S. Williams Practical Pharmacy Prize -----Walter Douglas Walkling
Conrad L. Wich Pharmacognosy Prize -----William Joseph Heinrich
David Fink Memorial Prize -----William Joseph Heinrich
Phi Beta Chapter, Phi Sigma Delta Fraternity Cup -----Harvey Donaldson Reisenweber
Kappa Chapter, Alpha Zeta Omega Prize -----Vito Tinelli, Jr.
Epsilon Alumnae Chapter, Lambda Kappa Sigma Sorority Prize ----Peyton Orenzo Stime

Certificates of Honor

Vito Tinelli, Jr.

Harvey Donaldson Reisenweber

June Eng Lee

Honorable Mention (Junior Class)

Louis Gubinsky

Sydney H. Hamet

Herbert C. Wagner

DEAN'S MEDALS FOR ACADEMIC EXCELLENCE (1960-61)

Class of 1961

Lawrence Y. Block
Louis Diamond

Constantine N. Maschas
Douglas W. McNeill
Peyton O. Stime

Vito Tinelli, Jr.
Walter D. Walkling

Honorable Mention

Norton J. Grossblatt

Harvey D. Reisenweber

Class of 1962

Louis Gubinsky
Sydney H. Hamet

James G. Konrad
Herbert C. Wagner

Honorable Mention

Walter P. Mackay

James Mendelsohn

Class of 1963

Jeanne A. Baker
David A. Blake
Don L. Bradenbaugh

Gerald M. Rachanow
James J. Welsh

Honorable Mention

Marjorie S. Abramovitz
Ronald M. Hopkins
Stephen P. Levin
Budne C. Reinke

James R. Ritchie
Leon D. Shargel
Valentine R. Sobczak
Kenneth C. Ullman

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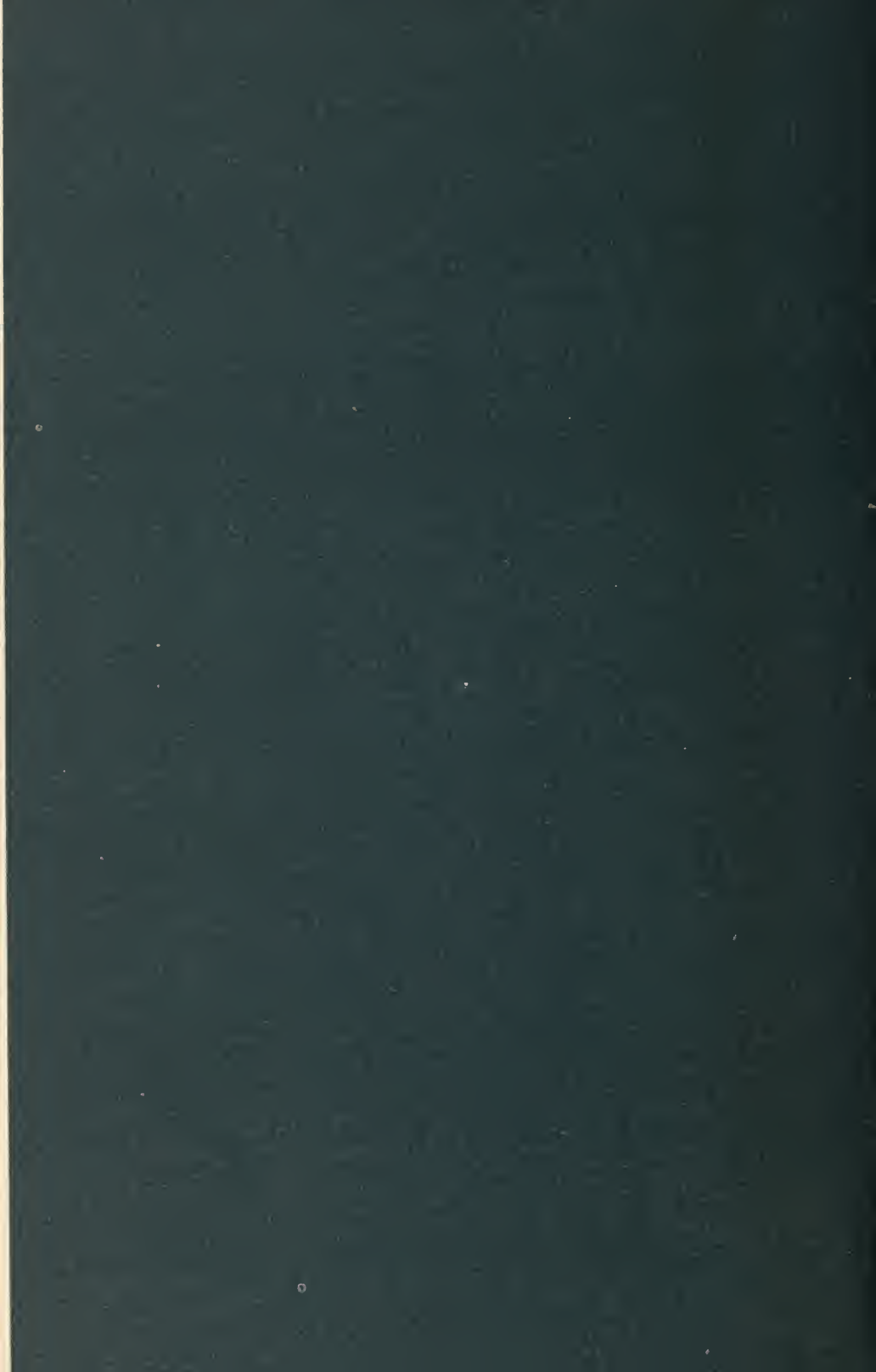
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THE UNIVERSITY is the rear guard and the advance agent of society. It lives in the past, the present and the future. It is the storehouse of knowledge; it draws upon this depository to throw light upon the present; it prepares people to live and make a living in the world of today; and it should take the lead in expanding the intellectual horizons and the scientific frontiers, thus helping mankind to go forward—always toward the promise of a better tomorrow.

From "The State and the University"
the inaugural address of
President Wilson H. Elkins,
January 20, 1955,
College Park, Maryland.



THE
UNIVERSITY of MARYLAND
BULLETIN



School of Pharmacy

1963-1964

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CATALOG AND 120th ANNOUNCEMENT

THE SCHOOL OF PHARMACY

(Maryland College of Pharmacy, 1841 to 1904)

1963-1964

THE UNIVERSITY OF MARYLAND

VOLUME 43, NUMBER 1

School of Pharmacy

636 West Lombard Street
Baltimore, Maryland 21201

This catalog includes information applying to the Five Year Program which became mandatory in September, 1960.

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ACADEMIC CALENDAR 1963-64

First Semester—1963

September 16	Monday	Fifth Year Registration—9:00-10:00 a.m. Fourth Year Registration—9:00-10:00 a.m. Third Year Registration—10:30-11:30 a.m. Orientation for New Students—2:00 p.m.
September 17	Tuesday	Graduate Registration—9:00-11:30 a.m.
September 23	Monday	Instruction begins with first scheduled period
November 27	Wednesday	Thanksgiving recess begins at close of last scheduled period
December 2	Monday	Instruction resumes with first scheduled period
December 20	Friday	Christmas recess begins at close of last scheduled period

1964

January 6	Monday	Instruction resumes with first scheduled period
January 27-31	Monday-Friday	First Semester examinations

Second Semester

February 4	Tuesday	Graduate Registration—9:00-11:30 a.m.
February 5	Wednesday	Third Year Registration—9:00-10:00 a.m. Fourth and Fifth Year Registration—10:30-11:30 a.m.
February 10	Monday	Instruction begins with first scheduled period
February 22	Saturday	Washington's Birthday, Holiday
March 26	Thursday	Easter recess begins at close of last scheduled period
March 31	Tuesday	Instruction resumes with first scheduled period
May 20-26	Wednesday-Tuesday	Fifth Year final examinations
May 26-June 1	Tuesday-Monday	Second Semester examinations
May 30	Saturday	Memorial Day, Holiday
June 6	Saturday	Commencement

All students are expected to complete their registration, including the payment of bills and filing of class cards, on the regular registration day. Students failing to comply with this regulation are charged a fee of ten dollars. No student is normally permitted to register after Saturday noon of the week in which instruction begins. The offices of the Registrar and Cashier are open daily, Monday through Friday, from 9:00 a.m. to 4:00 p.m.

CORRESPONDENCE

All correspondence prior to entrance in the Pre-professional Program of the Five Year Curriculum should be addressed to the Director of Admissions, University of Maryland, College Park, Maryland.

All correspondence relative to entrance in the Professional Program of the Five Year Curriculum should be addressed to the Director of Admissions, University of Maryland, Building 520R, Room 201, Lombard and Greene Streets, Baltimore, Maryland 21201.

Correspondence relating to the following topics should be addressed to the respective departments in care of the School of Pharmacy, 636 West Lombard Street, Baltimore, Maryland 21201:

Alumni Affairs, Business Matters, Catalogs and Brochures,
General Matters, Gifts and Bequests, Public Relations,
Housing of Students (Baltimore), Scholarships (Baltimore),
Scholastic Standing of Students (Baltimore), Transcripts of
Records (Baltimore), Vocational Placement.

VISITORS

Visitors are welcome at the School of Pharmacy in Baltimore. The Dean's office is open Monday through Friday from 9 a.m. to 5 p.m. and on Saturday by appointment.

The provisions of this publication are not to be regarded as an irrevocable contract between the student and the University of Maryland. The University reserves the right to change any provision or requirement at any time within the student's term of residence. The University further reserves the right at any time, to ask a student to withdraw when it considers such action to be in the best interests of the University.

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and

Maryland State Board of Agriculture

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B.S., University of Idaho, 1924; M.S., 1925; M.D., University of Louisville, 1929; Ph.D. (Hon.), University of Louisville, 1946.

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B.S., University of Maryland, 1933.

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- HAROLD C. HOFFSOMMER, *Chairman of the Division of Social Sciences*
B.S., Northwestern University, 1921; M.A., 1923; Ph.D., Cornell University, 1929.
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B.S., University of Maryland, 1923; M.S., 1924; Ph.D., 1926.

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Registered Pharmacist—South Dakota, New York, Maryland.

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PH.G., University of Maryland, 1929; B.S., IN PHARM., 1930; M.S., 1932; PH.D., 1936.
Registered Pharmacist—Maryland.

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B.S., Western Kentucky State College, 1946; PH.D., Northwestern University, 1949.

†W. ARTHUR PURDUM, *Professor of Hospital Pharmacy*
PH.G., University of Maryland, 1930; B.S. IN PHARM., 1932; M.S., 1934; PH.D., 1941.
Registered Pharmacist—Maryland.

DONALD E. SHAY, *Professor of Microbiology*
B.S., Lebanon Valley College, 1937; M.S., University of Maryland, 1938; PH.D., 1943.

FRANK J. SLAMA, *Professor of Pharmacognosy*
PH.G., University of Maryland, 1924; PH.C., 1925; B.S. IN PHARM., 1928; M.S., 1930; PH.D., 1935.
Registered Pharmacist—Maryland.

Associate Professors

BENJAMIN FRANK ALLEN, *Associate Professor of Pharmacy*
B.S. IN PHARM., University of Maryland, 1937; PH.D., 1949.
Registered Pharmacist—Maryland.

LESLIE C. COSTELLO, *Associate Professor of Anatomy and Physiology*
B.S., University of Maryland, 1952; M.S., 1954; PH.D., 1957.

† Part time.

UNIVERSITY OF MARYLAND

NORMAN J. DOORENBOS, *Associate Professor Pharmaceutical Chemistry*
B.S. IN CHEM., University of Michigan, 1950; M.S., 1951; PH.D., 1953.

IDA MARIAN ROBINSON, *Associate Professor of Library Science*
A.B., Cornell University, 1924; B.S.L.S., Columbia University School of Library Science, 1944.

Assistant Professors

†ADELE B. BALLMAN, *Assistant Professor of English*
A.B., Goucher College, 1926; PH.D., The Johns Hopkins University, 1935.

ROBERT J. KOKOSKI, *Assistant Professor of Pharmacognosy*
B.S. IN PHARM., University of Maryland, 1954; M.S., 1957; PH.D., 1962.
Registered Pharmacist—Maryland.

HILDA E. MOORE, *Assistant Professor of Library Science*
A.B., Randolph-Macon Woman's College, 1936; A.B.L.S., Emory University Library School, 1937.

RALPH F. SHANGRAW, *Assistant Professor of Pharmacy*
B.S. IN PHARM., Massachusetts College of Pharmacy, 1952; M.S., 1954; PH.D., University of Michigan, 1959.
Registered Pharmacist—Vermont, Massachusetts.

†RUTH F. WEINER, *Assistant Professor of Pharmaceutical Chemistry*
B.A., University of Illinois, 1956; M.S., 1957; PH.D., The Johns Hopkins University, 1962.

NICOLAS ZENKER, *Assistant Professor of Pharmaceutical Chemistry*
CD. SC. CH., University of Louvain (Belgium), 1948; M.A., University of California, 1953; PH.D., 1958.

Instructors

EARL F. BECKER, JR., *Instructor in Microbiology*
B.S., Muhlenberg College, 1951; M.S., George Washington University, 1957.

LILLIAN DARAGO, *Instructor in Anatomy and Physiology*
A.B., Goucher College, 1955; M.S., University of Maryland, 1962.

†CARL L. HEIFETZ, *Instructor in Pharmacology*
B.S. IN PHARM., University of Maryland, 1957; M.S., 1960.
Registered Pharmacist—Maryland, District of Columbia.

DEAN E. LEAVITT, *Instructor in Pharmacy Administration*
B.S. IN PHARM., University of Maryland, 1954; M.S., 1957.
Registered Pharmacist—Maryland.

PHILLIP J. LEVINE, *Instructor in Pharmacy*
B.S., Rhode Island College of Pharmacy, 1955; M.S., University of Maryland, 1957.
Registered Pharmacist—Maryland, Rhode Island.

† Part time.

Lecturers

†RICHARD D. DEAN, *Lecturer in Mathematics*

B.S., University of Maryland, 1950; M.ED., The Johns Hopkins University, 1954.

†JOSEPH S. KAUFMAN, *Lecturer in Pharmacy Administration*

B.A., University of Maryland, 1950; I.L.B., University of Maryland, 1953.

Visiting Lecturers

SAMUEL L. FOX, *Visiting Lecturer in Physiology*

PH.G., University of Maryland, 1934; B.S. IN PHARM., 1936; M.D., 1938.

Research Associate

HIROSHI OYA, *Research Associate in Physiology*

B.S., Tokyo University, 1953; PH.D., 1959.

Fellows

JUANITO B. ABCEDE, *Postdoctorate Fellow in Chemistry (National Cancer Institute)*

B.S. IN PHARM., University of Philippines, 1936; M.S., University of Michigan, 1951; PH.D., 1955.

Registered Pharmacist—Philippines.

PAUL C. BOSSLE, *The H. A. B. Dunning Research Fellow in Chemistry and Research Fellow in Chemistry (National Cancer Institute)*

B.S. IN PHARM., Loyola University, 1961.

Registered Pharmacist—Louisiana, Maryland.

LONDON W. BURBAGE, *Bristol-Myers Fellow in Pharmacy Administration (Research)*

PH.B., Medical College of Virginia, 1909; PH.G., 1910.

CONRAD P. DORN, JR., *U.S. Public Health Service Fellow in Chemistry*

B.S. IN PHARM., University of Maryland, 1958; M.S., 1961.

IRVING M. FRIED, *U. S. Public Health Service Fellow in Chemistry*

B.S. IN PHARM., Temple University, 1958; M.S., 1960.

Registered Pharmacist—Pennsylvania.

ROBERT E. HAVRANEK, *U.S. Public Health Service Fellow in Chemistry*

B.S. IN PHARM., Columbia University, 1956; M.S., University of Maryland, 1959.

Registered Pharmacist—California, Maryland, New York, Florida.

BARBARA H. KONOPIK, *Research Fellow in Chemistry (National Institute of Mental Health)*

A.B., Mt. St. Agnes College, 1957.

LEON MILEWICH, *Postdoctorate Fellow in Chemistry (Smith, Kline and French Laboratories)*

B.S., University of Buenos Aires, Argentina, 1956; M.S., 1958; PH.D., 1959.

MASAKO NAKAGAWA, *Research Fellow in Chemistry (National Cancer Institute)*

B.S., Hokkaido University, Japan, 1958; M.S., 1960.

† Part time.

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VITHALBHAI C. PATEL, *Research Fellow in Chemistry (National Cancer Institute)*
B.PHARM., L.M. College of Pharmacy, Gujarat University, India, 1956; M.S., University of Maryland, 1959.

GEORGE E. REIER, *Noxzema Foundation Fellow in Pharmacy*
B.S. IN PHARM., University of Maryland, 1958; M.S., 1961.
Registered Pharmacist—Maryland.

ROBERT J. SCOTT, *Postdoctorate Fellow in Chemistry (Smith, Kline and French Laboratories)*
B.SC., Queens University, Belfast, 1959; PH.D., University of London, 1962.
Registered Pharmacist—Britain, North Ireland.

ARVIN P. SHROFF, *Postdoctorate Fellow in Chemistry (U. S. Public Health Service)*
B.SC., M. S. University, Baroda, India, 1954; M.S., Duquesne University, 1958; PH.D., University of Maryland, 1962.

MARTIN E. STEIN, *Fellow, American Foundation for Pharmaceutical Education and Sydnor Barksdale Penick Memorial Fellow for 1963-64*
B.S. IN PHARM., Massachusetts College of Pharmacy, 1961; M.S., 1963.
Registered Pharmacist—Massachusetts, Maryland.

FRANCIS J. TINNEY, *Research Fellow in Chemistry (National Cancer Institute)*
B.S. IN PHARM., St. John's University, College of Pharmacy, 1950; M.S., 1961.
Registered Pharmacist—New York.

THEODORE H. T. WANG, *Research Fellow in Chemistry (Smith, Kline and French Laboratories)*
B.S., Mukden Medical College, China, 1949; M.S., University of Nebraska, 1958.

JOHN D. WARTHEN, JR., *U. S. Public Health Service Fellow in Chemistry*
B.S. IN PHARM., University of Maryland, 1960.
Registered Pharmacist—Maryland.

Graduate Assistants

LARRY L. AUGSBURGER, *Assistant in Pharmacy*
B.S. IN PHARM., University of Maryland, 1962.
Registered Pharmacist—Maryland.

EUGENE R. BLAU, *Assistant in Pharmacy*
B.S. IN PHARM., Fordham University, 1962.
Registered Pharmacist—Maryland.

LAWRENCE H. BLOCK, *Assistant in Pharmacy*
B.S. IN PHARM., University of Maryland, 1962.
Registered Pharmacist—Maryland.

LOUIS DIAMOND, *Assistant in Pharmacology*
B.S. IN PHARM., University of Maryland, 1961; Registered Pharmacist—Maryland.

CHARLES L. GUYTON, *Assistant in Chemistry*
B.S. IN PHARM., Mississippi State University, 1961.

SYDNEY HAMET, *Assistant in Pharmacy*
B.S. IN PHARM., University of Maryland, 1962.
Registered Pharmacist—Maryland.

M. DAVID RICHMAN, *Assistant in Pharmacy*
B.S. IN PHARM., University of Maryland, 1960.
Registered Pharmacist—Maryland.

KAKUBHAI M. VORA, *Assistant in Chemistry*
B. PHARM., Gujarat University, India, 1961.

CLARA C. T. WHANG, *Assistant in Chemistry*
B.A., Clarke College, 1962.

LIBRARY STAFF

Health Sciences Library

IDA MARIAN ROBINSON, *Librarian*
A.B., B.S.L.S.

HILDA E. MOORE, *Associate Librarian*
A.B., A.B.L.S.

SARAH L. ATKINS, *Cataloging Assistant*

EDITH M. COYLE, *Head, Serials Department*
A.B., A.B.L.S., M.A.

ELIZABETH A. FORNEY, *Assistant Reference Librarian*
A.B., M.S.L.S.

IOLA R. GLOCK, *Cataloger*
B.S., M.S.L.S.

RUTH E. HANNA, *Assistant Acquisitions Librarian*
A.B., M.S.L.S.

LORRAINE S. HLAVIN, *Serials Assistant*

SIMONE C. HURST, *Head, Circulation Department*

FLORENCE R. KIRK, *Reference Librarian*

HANS-GUENTHER R. LISTFELD, *Assistant Serials Librarian*
B.S., M.S.L.S.

BEATRICE MARRIOTT, *Reference Librarian*
A.B.

ELEANOR M. MITTEN, *Head, Catalog Department*
B.S., B.S.L.S.

JACQUELINE B. PFEIFFER, *Secretary to the Librarian*

KAE SARUBIN, *Assistant Circulation Librarian*

UNIVERSITY OF MARYLAND

ELWOOD STERLING, *Library Clerk*

MARTHA L. SULLIVAN, *Cataloging Assistant*

KATHERINE M. WHEATLEY, *Serials Assistant*

Office Staff

DAISY LOTZ GUE, *Secretary-Stenographer*

MARGARET E. BEATTY, *Senior Stenographer*

DORIS M. KENNEDY, *Senior Stenographer*

NANCY R. HAWKINS, *Senior Stenographer*

THE SCHOOL

HISTORY AND PROGRAM

The purposes of the School of Pharmacy are to train students for the efficient, ethical practice of all branches of pharmacy; to instruct students in general scientific and cultural subjects so they can read critically, express themselves clearly, and think logically as members of a profession and citizens of a democracy; to guide students into productive scholarship and research for the increase of knowledge and techniques in the healing arts of pharmacy.

The Maryland College of Pharmacy, the oldest pharmacy school of the South, was organized on July 20, 1840 by a progressive group of Maryland physicians and apothecaries to provide systematic instruction in Pharmacy to replace the out-dated apprenticeship training. The College, incorporated on January 27, 1841, gave its first lectures in November. In 1904, the College joined with a group of medical schools and the Maryland College of Dental Surgery to offer cooperative instruction in the health sciences. The new institution was known as the University of Maryland. In 1920, this group of Baltimore professional schools was merged with the Maryland State College at College Park to form the present University of Maryland.

The School of Pharmacy in Baltimore now occupies buildings constructed specifically for pharmaceutical education. The laboratories and classrooms are equipped with the most modern apparatus and every aid to instruction and for research in pharmaceutical sciences is available.

The library facilities are excellent. The pharmacy collection containing over 30,000 books is housed in the new Health Sciences Library.

Students have access to the time-honored collections of the Enoch Pratt, the Peabody, the Medical and Chirurgical Faculty, and The Johns Hopkins University. The libraries are within convenient distance of the School. Students also have access to the art collections at the Walters Art Gallery, and the Baltimore Museum of Art.

Like all professions devoted to education in the health sciences, pharmacy has expanded its period of training. The American Association of Colleges of Pharmacy requires a Five Year Program and students entering the study of pharmacy on or after the Autumn of 1960 are required to enroll in a Five Year Pharmacy Program.

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education. The School holds membership in the American Association of Colleges of Pharmacy.

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DEGREES

The School of Pharmacy offers courses leading to the following degrees: Bachelor of Science in Pharmacy, Master of Science, Doctor of Philosophy. The general procedures to be followed by undergraduate students are set forth below.

Candidates for advanced degrees must register in the Graduate School of the University. For detailed information, see the catalog of the Graduate School.

PROGRAM

As a result of a decision by the American Council on Pharmaceutical Education, students beginning a pharmacy or pre-professional curriculum on or after April 1, 1960 are required to enroll in the academic program of not less than five years.

At the University of Maryland the five year program consists of two years of a pre-professional and a three-year pharmacy program. The first year of the professional program was offered in Baltimore in September 1961.

SCHOOL OF PHARMACY, COLLEGE PARK CAMPUS

The pre-professional program is not available in Baltimore but may be obtained at the College Park Campus of the University or any other accredited university or college where appropriate courses are offered.*

SCHOOL OF PHARMACY, BALTIMORE CAMPUS

Only the three year professional program is offered in Baltimore.

REQUIREMENTS FOR ADMISSION TO THE FIVE YEAR PROGRAM

ADMISSION TO PRE-PROFESSIONAL PROGRAM AT COLLEGE PARK

Interested secondary school students are invited to write to the Dean of the School of Pharmacy in Baltimore for a catalog concerning the School and for literature about the opportunities in the pharmacy profession.

A graduate of an accredited secondary school in Maryland whose secondary record indicates probable success in the University will be admitted provided that:

* Not less than 24 semester hours of academic work immediately prior to admission to the Professional Program at Baltimore must be completed in a regionally accredited college or university.

1. his scholastic average in major subjects in his last two years in high school has been satisfactory;
2. his program has included the following:

<i>Subjects</i>	<i>Recommended</i>	<i>Required</i>
English	4 Units	4 Units
College Preparatory Mathematics—including algebra (1), plane geometry (1) and additional units in advanced algebra, solid geometry, trigonometry, or advanced mathematics	4	2
Physical Sciences (Chemistry and Physics)	2	1
History and Social Sciences	2	1
Biological Sciences	1	0
Foreign Language—German or French	2	0
Unspecified academic subjects	1	8
Total	16	16

3. he has had the test results of the American College Testing Program submitted to the University Admissions Office;
4. he has a satisfactory general recommendation from his secondary school as to his character and ability.

All applicants for admission, who do not qualify as Maryland residents (see definition of Residents and Non-Residents, page 11) must also have the results of the American College Testing Program and complete high school records submitted to the Admissions Office. Only a limited number of well qualified out-of-state applicants can be considered for admission since first preference in admission is given to Maryland residents.

A complete statement of admission requirements and policies will be found in the publication entitled "An Adventure in Learning." A copy of this publication may be obtained by writing to the Catalog Mailing Office, North Administration Building, University of Maryland, College Park, Maryland.

Application forms may be obtained only from the Director of Admissions of the University of Maryland at College Park. Applications must be made to the Director of Admissions at College Park, Maryland.

A fee of \$10.00 must accompany a prospective student's application for admission. If a student enrolls for the term for which he applied, the fee is accepted in lieu of the matriculation fee.

† Annual costs of attending the University at College Park for Maryland residents include: fixed charges, \$200.00; instructional materials, \$24.00; special fees, \$77.00 to \$82.00; board, \$400.00 and lodging, \$270.00 to

† The University reserves the right to make such changes in fees and other charges as may be found necessary, although every effort will be made to keep the cost to the student as low as possible.

UNIVERSITY OF MARYLAND

\$300.00. Non-resident students are assessed an additional fee of \$350.00 and lodging costs are \$320.00 to \$350.00.

† Effective September 1, 1964: Annual costs of attending the University at College Park for Maryland residents include: fixed charges, \$250.00; instructional materials, \$24.00; special fees, \$72.00; board, \$420.00 and lodging, \$290.00 to \$320.00. Non-resident students are assessed an additional fee of \$400.00 and lodging costs are \$340.00 to \$370.00.

COLLEGE PARK DIVISION

FIRST YEAR	Semester	
	I	II
Chemistry 1, 3—General Chemistry.....	4	4
*English 1, 2—Composition and American Literature.....	3	3
Math. 10, 11—Introduction to Mathematics.....	3	3
or		
Math. 18, 19—Introductory and Elementary Analysis.....	3	4
Zoology 1—General Zoology.....	4	..
Botany 1—General Botany.....	..	4
Physical Activities.....	1	1
Air Science 2, 3—Basic Air Force R.O.T.C. (Men).....	2	2
Health 2, 4—Health (Women).....	2	2
Total.....	17	17-18
SECOND YEAR		
*English 3, 4—Composition and World Literature.....	3	3
*History 5, 6—History of American Civilization.....	3	3
Physics 10, 11—Fundamentals of Physics.....	4	4
Chemistry 19—Elements of Quantitative Analysis.....	..	4
Economics 37—Fundamentals of Economics.....	3	..
*Government and Politics 1 or Group I Elective.....	3	..
Elective:		
Approved Elective from Group I or Group II of		
American Civilization Program.....	..	3
Physical Activities.....	1	1
Total.....	17	18

THE PROGRAM IN AMERICAN CIVILIZATION

The University considers that it is important for every student to achieve an appreciative understanding of this country, its history and its culture. It has therefore established a comprehensive program in American Civilization. This program is also designed to provide the student with a general educational background.

Work in American Civilization is offered at three distinct academic levels. The first level is required of all freshmen and sophomores at the University

*The Program in American Civilization.

† The University reserves the right to make such changes in fees and other charges as may be found necessary, although every effort will be made to keep the cost to the student as low as possible.

and is described below. The second level is for undergraduate students wishing to carry a major in this field (see catalog for the College of Arts and Sciences). The third level is for students desiring to do graduate work in the field (see catalog for the Graduate School).

All students receiving a baccalaureate degree from the University of Maryland must (except as specific exceptions are noted in printed curricula) obtain 24 semester hours of credit in the lower division courses of the American Civilization Program. Although the courses in the Program are prescribed generally, some choice is permitted, especially for students who demonstrate in classification tests good previous preparation in one or more of the required subjects.

The 24 semester hours in American Civilization are as follows:

1. English (12 hours, Eng. 1, 2 and 3, 4), American History (6 hours, H. 5, 6), and American Government (3 hours, G. & P. 1) are required subjects; however, students who qualify in one, two or all three of these areas by means of University administered tests are expected to substitute certain elective courses. Through such testing a student may be released from 3 hours of English (9 hours remaining as an absolute requirement), 3 hours of American History (3 hours remaining as an absolute requirement), and 3 hours of American Government. Students released from 3 hours of English will take Eng. 21 instead of Eng. 1 and 2. Those released from 3 hours of History will take, instead of H. 5 and 6, any one of the following three hour courses: H. 41, H. 42, H. 51, H. 52, H. 61, H. 62, H. 71, or H. 72. Students who have been exempted from courses in English, American History, or American Government may not take such courses for credit.

2. For the 3 additional hours of the 24 hours required, students elect one course from the following group (Elective Group I):

Economics 37, Fundamentals of Economics. (Not open to Freshmen. Students who may wish to take additional courses in economics should substitute Economics 31 for Economics 37).

Philosophy 1, Philosophy of Modern Man

Psychology 1, Introduction to Psychology

Sociology 1, Sociology of American Life

3. Students who, on the basis of tests, have been released from 3, 6 or 9 hours of otherwise required courses in English, American History or American Government (see 1 above), shall select the replacements for these courses from any or all of the following groups: (a) more advanced courses in the same department as the required courses in which the student is excused, or (b) Elective Group I (see 2 above), provided that the same course may not be used as both a Group I and a Group II choice, or (c) Elective Group II. Group II consists of the following 3-hours courses:

H. 42, Western Civilization; either H. 51 or 52, The Humanities; either Music 20, Survey of Music Literature or Art 22, History of American Art; and Sociology 5, Anthropology.

ADMISSION TO THE PROFESSIONAL PROGRAM AT BALTIMORE

1. FROM COLLEGE PARK DIVISION

Students who have completed the prescribed pre-professional program at College Park with a scholastic average of not less than C (2.0) will qualify for advancement to the pharmacy program at Baltimore.

In the semester preceding enrollment in the Baltimore division of the School of Pharmacy each student will be required to complete a form of intent and return it to the Dean of the School of Pharmacy at Baltimore.

2. FROM OTHER UNIVERSITIES AND COLLEGES

A. Prerequisites

Applicants for admission must present evidence of having completed successfully two academic years of work in an accredited college* of arts and sciences based upon the completion of a four year high school course or the equivalent in entrance examinations. The college course must consist of a minimum of 60 semester hours of credit exclusive of physical education, military science or similar courses. The 60 semester hours must include 12 hours of English, 6 hours of college level mathematics (algebra, trigonometry and analytical geometry), 4 hours of botany and 4 hours of zoology (or 8 hours of general biology), 8 hours of general inorganic chemistry (including qualitative analysis), 4 hours of quantitative chemistry, 8 hours of physics, 3 hours of economics, 6 hours of history and the remainder as electives from the non-science areas. It is strongly recommended that the electives include political science and sociology although courses in anthropology, philosophy, psychology, and speech will be given consideration.

All applicants for admission to the School of Pharmacy at Baltimore must have a scholastic average of not less than C (2.0) when the lowest passing grade is D (1.0), or its equivalent. The average shall be based on all college courses undertaken by the student in his pre-professional program, exclusive of credit in military science, physical education, hygiene, or similar courses. *Transfer credit is given only for the courses completed with a grade of C (2.0) or higher and which are a part of the pre-professional curriculum.*

B. Application Procedures

Candidates seeking admission to the School of Pharmacy in Baltimore should write to the Director of Admissions and Registrations, University

*Not less than 24 semester hours of academic work immediately prior to admission to the Professional Program at Baltimore must be completed in a regionally accredited college or university.

of Maryland, Building, 520R, Room 201, Lombard and Greene Streets, Baltimore, Maryland 21201. Applicants wishing advice on any problem relating to their applications should communicate with the above office.

ENROLLMENT IN THE PRE-PROFESSIONAL PROGRAM AT COLLEGE PARK

Students applying for the first two years of the Pharmacy curriculum at College Park may obtain application blanks by writing to the Admissions Office at College Park. Students meeting the requirements for admission will receive letters of admission from the Admissions Office at College Park. Admitted students will receive detailed directions for registering from the Office of the Registrar at College Park a few weeks prior to September registration period.

There is a fee of \$5.00 for changes in registration made after the first week of instruction.

ENROLLMENT IN THE PROFESSIONAL PROGRAM AT BALTIMORE

1. FROM COLLEGE PARK DIVISION

Students who had filed with the Dean of the School Pharmacy at Baltimore a letter of intent to continue with the professional program of the curriculum and who have completed the requirements of the pre-professional program will be notified by the Dean of the School of Pharmacy that they have qualified for advancement into the professional program.

These students will receive detailed direction for registering from the Baltimore Office of the Registrar a few weeks prior to the September registration period.

2. FROM OTHER UNIVERSITIES AND COLLEGES

Students meeting the requirements for admission will receive certificates of admission issued by the Director of Admissions and Registrations at Baltimore. Admitted students will receive detailed directions for registering from the Office of the Registrar at Baltimore a few weeks prior to the September registration period.

TUITION AND FEES (BALTIMORE CAMPUS)

FULL-TIME UNDERGRADUATE STUDENTS

Tuition Fee (per semester)

Residents of Maryland
Non-Residents

\$135.00
160.00

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<i>Laboratory Fee (per semester)</i>	15.00
(This one fee covers all laboratory courses)	
<i>*Student Union Fee (per annum)</i>	30.00
<i>*Special Fee (per annum)</i>	10.00
<i>*Student Union Fee (Summer Session)</i>	6.00
<i>Student Activities Fee (per semester)</i>	10.00
(This fee covers subscription to the yearbook, <i>Terra Mariae</i> , all expenses of School luncheons, picnics, dances.)	

The tuition, laboratory and student activities fees for each semester are payable at the time of registration therefor. The Student Union fee and the Special fee are payable in full at the time of first registration. Students wishing to make arrangements for deferred payment of tuition charges must do so with the Financial Office at or prior to registration for the semester for which such charges are imposed.

Incidental Charges

For New Students Only (Not applicable to students accepted from School of Pharmacy, College Park)

Application fee (non-returnable)	7.50
Matriculation fee (non-returnable)	10.00
Deposit upon acceptance for admission	50.00
(This fee will be credited against the first semester's tuition.)	

For Candidates for B.S. in Pharmacy Degree

Graduation Fee (to be paid in February of the Fifth Year)	15.00
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Delinquencies and Breakage

Late Registration Fee	10.00
Special Examination Fee	5.00
Breakage—Students are required to pay for all breakage in excess of \$5.00 per year.	

Other Expenses

Books and supplies, approximately	75-150.00
Students registering for more than a regularly scheduled semester's work will be charged additionally for each course.	
Fee for Changes in Registration after first week	5.00

*The Student Union fee is payable by all students enrolled in the Professional Schools on the Baltimore Campus and is used to pay interest on and amortize the cost of construction of the Union Building. The Special fee is payable by all full-time students enrolled in the Professional Schools on the Baltimore campus and is used to finance the equipment needed for the Union Building. For students enrolling for the first time at the beginning of the second semester, the Student Union Fee will be \$15.00; the Special Fee will be \$5.00. All students carrying as much as 12 credit hours of work are considered full-time students subject to this fee.

All summer school students will pay a \$6.00 Student Union Fee. This Student Union Fee is in addition to the tuition, laboratory fees, and book charges, etc.

PART-TIME UNDERGRADUATE STUDENTS

All students registered for twelve semester hours or more are considered full-time students. Part-time students are charged as follows:

<i>Tuition Fee (for each semester hour per semester)</i>	\$15.00
<i>Laboratory Fees (per semester)</i>	
Anatomy and Histology	10.00
Chemistry	12.00
Microbiology	15.00
Pharmacognosy	5.00
Pharmacology	10.00
Pharmacy	10.00
Physiology	10.00
*Student Union Fee (per annum)	6.00
*Student Union (Summer Session)	6.00
Student Activities Fee (per semester)	10.00

GRADUATE STUDENTS

Matriculation fee (for new students only, non-returnable)	\$10.00
†Tuition fee (per semester hour each semester)	15.00
Laboratory fee—Same as undergraduate schedule above	
*Student Union Fee (per annum for full time students)	30.00
*Special Fee (per annum for full time students only)	10.00
*Student Union Fee (Summer Session, all students)	6.00
*Student Union Fee (per annum, part time students)	6.00
Graduation Fee	
Master's Degree	10.00
Doctor's Degree (including hood and microfilming of thesis)	50.00

*The Student Union fee is payable by all students enrolled in the Professional Schools on the Baltimore Campus and is used to pay interest on and amortize the cost of construction of the Union Building. The Special fee is payable by all full-time students enrolled in the Professional Schools on the Baltimore campus and is used to finance the equipment needed for the Union Building. For students enrolling for the first time at the beginning of the second semester, the Student Union Fee will be \$15.00; the Special Fee will be \$5.00. All students carrying as much as 12 credit hours of work are considered full-time students subject to this fee. All summer school students will pay a \$6.00 Student Union Fee. This Student Union Fee is in addition to the tuition, laboratory fees, and book charges, etc.

†The present \$15.00 fee per credit hour for students enrolled in the Graduate School will be increased to \$18.00. Effective September 1, 1964, the \$18.00 rate will apply to all students enrolled in the Graduate School without regard to the location at which the course is given and will apply to audited courses as well as courses taken for credit.

WITHDRAWALS FROM SCHOOL OF PHARMACY AT BALTIMORE

If a student desires or is compelled to withdraw from the School he must file a written request for withdrawal with the Dean.

A student who does not comply with the above regulation is not issued an honorable dismissal and is not accorded any refund to which he might otherwise be entitled.

Minors may withdraw only with the written consent of parent or guardian.

1. REFUND OF FEES UPON WITHDRAWAL.

Fees, excluding Application Fee, Matriculation Fee, Student Activities Fee, the \$50.00 deposit on tuition and any scholarship credit, are refunded to withdrawing students in accordance with the following schedule:

Period from date instruction begins:

Two weeks or less	80%
Between two and three weeks	60%
Between three and four weeks	40%
Between four and five weeks	20%
Over five weeks	No return

The date used in computing refunds is the date the application for withdrawal is filed in the Office of the Dean.

2. GRADES

The record of students who withdraw is computed as follows:

Before eight weeks of the semester have passed	WX
After eight weeks of the semester have passed, if work has been of passing grade	WP
After eight weeks of the semester have passed, if work has been of failing grade	WF

Any student who (1) fails to withdraw from any course or from the school in the required manner or (2) who registers, does not attend classes and does not withdraw, will receive grades of F in all courses for which he has registered.

TEXT BOOKS

Each student is required to have his own text books. The books required in each course will be announced at the beginning of each semester.

TUITION AND FEES FOR PRE-PROFESSIONAL PROGRAM (COLLEGE PARK CAMPUS)

See page 3 for summary statements and consult "Adventure in Learning" which is available from College Park, Maryland.

CHANGES IN CURRICULUM

The Faculty Assembly reserves the right to make, at any time, such changes in the curriculum as may be found necessary or desirable.

DEFINITION OF RESIDENCE AND NON-RESIDENCE

Students who are minors are considered to be resident if at the time of their registration their parents have been domiciled in the State of Maryland for at least six months.

The status of the residence of a student is determined at the time of his first registration in the University, and may not thereafter be changed by him unless, in the case of a minor, his parents move to and become legal residents of Maryland by maintaining such residence for at least six months. However, the right of the minor student to change from a non-resident status to resident status must be established by him prior to the registration period set for any semester.

Adult students are considered to be residents if at the time of their registration they have been domiciled in Maryland for at least six months provided such residence has not been acquired while attending any school or college in Maryland or elsewhere. *Time spent on active duty in the armed services while stationed in Maryland will not be considered as satisfying the six-months period referred to above except in those cases in which the adult was domiciled in Maryland for at least six months prior to his entrance into the armed service and was not enrolled in any school during that period.*

The word "domicile" as used in this regulation shall mean the permanent place of abode. For the purpose of this rule only one domicile may be maintained.

ACADEMIC REGULATIONS (COLLEGE PARK CAMPUS)

Each entering student is subject to the rules and policies published in the official "University General and Academic Regulations."

ACADEMIC REGULATIONS (BALTIMORE CAMPUS)

ATTENDANCE REQUIREMENTS

Students who have not attended eighty-five percent of scheduled classes and laboratory periods for any subject are not admitted to the final examination in that subject. Absences due to illness and late registration are normally counted with the fifteen percent allowable absence. Lateness of more than half a period is construed as absence; two latenesses of less than half a period are also construed as an absence.

EXAMINATIONS

Written and oral quizzes are given throughout the semester at the discretion of the instructor. Final examinations are held at the end of each semester as scheduled on the calendar printed in this catalog.

Students unable to appear for final examinations must report to the Dean immediately. When the absence is justifiable, the Dean will grant permission for a deferred examination.

GRADING SYSTEM

The School uses the standard University of Maryland grading system:

<i>Grade</i>	<i>Interpretation</i>	<i>Point Value</i>
A	Excellent	4
B	Good	3
C	Fair	2
D	Poor but passing	1
F	Failure	0
I	Course work incomplete	replaced by definite grade when course requirements have been met

Standing in scholarship is based upon the grade-point average for the semester's work. This average is found by multiplying the grade received by the number of credit hours the course carries, e.g.:

<i>Subject</i>	<i>Credit</i>	<i>Grade</i>	<i>Points</i>
Chemistry	4	C	8
Microbiology	4	C	8
Pharmacognosy	4	B	12
Pharmacy	4	A	16
Pharmacy Administration	3	D	3
	19		47

Dividing the number of points by the number of credits, the student is found to have a grade point average of 2.47.

When, for any reason, a course is repeated, the final mark is used.

In computing scholastic averages only those courses taken in residence at the University of Maryland are considered.

MID-SEMESTER FAILURE WARNINGS

Each student is assigned to a Class Advisor who counsels him on his academic standing. Seven weeks after the beginning of each semester, the Dean warns and the Advisor interviews all students earning grades of D and F.

INCOMPLETE WORK

The mark of I (Incomplete) is exceptional. It is to be given only to a student whose work in a course has been qualitatively satisfactory, when, because of illness or other circumstances beyond his control, he has been unable to complete the requirement. Whenever the mark I is used the instructor enters on the class card a reason of the character stated above with an estimate of the quality of the student's work. In cases when this mark is given the student must complete the work assigned by the instructor by the end of the next semester in which that subject is again offered or the mark I becomes F.

RAISING GRADE OF D

Work of mark D, or of any passing mark, cannot be raised to a higher mark except by repeating the course. A student who repeats a course in which he failed or for which he has received credit for work done at the University, or elsewhere, must meet all the requirements of the course, including regular attendance, laboratory work, and examinations, but he will not receive any additional credit for the course completed with a passing grade.

If the work is completed at the University of Maryland his final mark will be substituted for the mark already recorded. Although the final mark received in the course will be used in determining credit for promotion and graduation, it does not apply to honors and awards. See applicable section under "Honors and Awards."

If the student is authorized by the Dean to repeat the course or its equivalent, at another university or college, the regulations applicable to transfer of credit apply. Credit is given if the course is completed with a grade of C (2.0) or higher; for purposes of computing grade averages, transfer credit is considered as the equivalent of a grade of C (2.0).

REMOVAL OF AN F GRADE

A student receiving an F grade in any course and if not successful in raising his grade after repeating the course once, will be required to withdraw from the School of Pharmacy. In unusual cases, a student

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may be permitted, with the written permission of the Dean and the head of the department giving the course, to repeat the course for the second time. Such permission can be given to the student for only one course.

An appropriately supported petition for any exception to the above regulation must be submitted to the Faculty Council. Such exception will be granted under unusual and extraordinary circumstances and shall require the approval of the head of the department giving the course.

The above rules on removal of an F grade apply also to the student who is permitted to take the course at another institution to meet requirements for the degree from the School of Pharmacy of the University of Maryland.

REGULATIONS FOR PROMOTION AND PROBATION

All students are expected to maintain a grade average of not less than C (2.0) for each semester. Any student who fails to maintain a grade average of C (2.0) for any semester will be placed on probation during the next semester. Students in the Fifth Year Class must maintain a grade average of C (2.0) to become eligible for graduation.

Students who fail more than one-fifth and less than one-half, in semester hour credit, of their scheduled work for any semester will be placed on probation during the next semester.

Any student on probation must pass all courses for which he is registered and must maintain a grade average of C (2.0) or he will be automatically dropped from the School of Pharmacy at the end of that semester.

A student who fails in one-half or more of his scheduled academic credits in any semester shall be dismissed at the end of that semester for unsatisfactory scholarship.

Any student who has been on probation for two semesters and then obtains a probation grade point average for a third semester shall be automatically dropped at the end of that semester.

Any student who is dismissed from the School of Pharmacy is required to report to the Dean's Office for dismissal procedures.

REGULATIONS FOR READMISSION OF STUDENTS DROPPED FOR POOR ACADEMIC STANDING

A student who has been dropped for poor academic standing may apply in writing to the Dean for readmission after a lapse of at least one semester.

Any student who is readmitted shall be placed on probation for that semester.

Any student who has been dropped for poor academic standing may be readmitted only once.

REGULATIONS FOR REVIEW

In the application of the foregoing rules and regulations, the Faculty Assembly of the School of Pharmacy shall act as the final Board of Review. Any student may apply in writing to the Faculty Assembly for a reconsideration of his particular case.

*ELECTIVE PROGRAMS AT BALTIMORE

1. FOURTH YEAR ELECTIVES

Students are required to elect either the General Pharmacy Major or the Pre-Graduate Major by May 1 of the Third Year.

Students to be eligible for the Pre-Graduate Major must have established the aptitudes for the successful pursuit of graduate work and must meet the necessary prerequisites. Students not qualifying for the Pre-Graduate Major will be required to pursue the General Pharmacy Major.

2. FIFTH YEAR ELECTIVES

Students must make elective selections by May 1 of the Fourth Year. The General Pharmacy Major of the Fourth Year Class may continue with the General Pharmacy Major or elect the Hospital Major. Students continuing the General Pharmacy Major must choose between Pharmacognosy 52, Animal Health Products and Pharmacy 156, Cosmetics and Dermatological Preparations.

The Hospital Majors will follow the prescribed program. Students in the Pre-Graduate Major will pursue Chemistry 187, 189, 188, 190 Physical Chemistry and Physical Chemistry Laboratory.

CLASSIFICATION OF STUDENTS—PROFESSIONAL PROGRAM

Students who have completed 31-70 credit hours of the Professional Program with a grade average of C (2.0) in addition to the Pre-Professional requirements will be classified as students of the Fourth Year Class.

General Pharmacy Majors who have completed 71 credit hours of the Professional Program with a grade average of C (2.0) will be classified as Fifth Year students. Pre-Graduate Majors in order to advance in their Elective Program and attain the classification of Fifth Year Class must have completed 73 credit hours of the Professional Program with an academic quality indicative of the successful pursuit of graduate work.

General Pharmacy Majors or Hospital Majors must have maintained a grade average of C (2.0) during the Fifth Year and have completed a minimum of 108 credit hours of the Professional Program to be con-

*The elective programs must be approved by the Class Adviser and the Dean. For additional information consult with the Class Adviser and see the respective curricula on pages 32 and 33.

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sidered as candidates for graduation. Pre-Graduate Majors who have completed a minimum of 110 credit hours of the Professional Program with a grade average of at least C (2.0) will be considered as candidates for graduation.

REQUIREMENTS FOR GRADUATION

The degree of Bachelor of Science in Pharmacy will be conferred upon students who have spent at least the Fifth Year in residence at the School of Pharmacy at Baltimore and have been accredited 108 semester hours instruction in the Professional Program as General Pharmacy Majors or Hospital Majors or have been accredited 110 semester hours instruction in the Professional Program as Pre-Graduate Majors and who have attained the required grade point standings and met the other requirements.

TRANSCRIPTS OF RECORDS

Students or alumni desiring transcripts of scholastic records may obtain them from the Registrar. The University rules regarding the issuance of transcripts are as follows: one copy of a student's records is made without charge; for additional copies, there is a fee of one dollar for each transcript.

Transcript records are of two kinds:

- (a) Informal transcripts which may be obtained by the student or alumnus for such personal use as he may wish; and
- (b) Official transcripts, bearing the University seal, which are forwarded, on request, to educational institutions, Government agencies, etc., as attested evidence of the student's record at the School of Pharmacy and the honorable dismissal therefrom.

No transcript of a student's record will be furnished in the case of any student or alumnus whose financial obligations to the School of Pharmacy have not been satisfied.

REGISTRATION WITH THE MARYLAND BOARD OF PHARMACY

The Maryland Pharmacy Law, as amended in 1931, requires all students entering upon the study of Pharmacy in the State to file application with the Maryland Board of Pharmacy. The law reads as follows:

"Any person enrolling as a student in pharmacy in any school or college of pharmacy in this State shall not later than thirty days after enrolling, file with the Secretary of the Maryland Board of Pharmacy, an application for registration as a student of pharmacy in which said application he shall be required to furnish such information as the Board may deem

appropriate, and simultaneously with the filing of said application, shall pay the Board a fee of one dollar; all such students of pharmacy shall, at the beginning of any subsequent school or college year, submit to the said Board a sworn statement of any and all actual drug store experience acquired during the preceding vacation months."

LICENSURE REQUIREMENTS OF THE MARYLAND BOARD OF PHARMACY

The Maryland Board of Pharmacy will grant a certificate of registration to those persons deemed competent, after examination, by said Board of Pharmacy. Any person of good moral character who has attained the age of twenty-one years, is a graduate of an accredited school or college of pharmacy, and has completed one year as a registered apprentice in a drug store or pharmacy approved by said Board of Pharmacy for such purposes may sit for examination given for the purpose of registration.

A student may not obtain credit or practical experience in a drug store or pharmacy acquired prior to attendance as a regular student in a school or college of pharmacy or while in attendance at said school or college of pharmacy. Four months of the required practical pharmacy experience as a registered apprentice must be acquired subsequent to graduation from an accredited school or college of pharmacy, in a drug store or pharmacy approved by the Board for such purposes.

Prospective students are advised to contact the Secretary of the Maryland Board of Pharmacy, 301 West Preston Street, Baltimore, Maryland 21201, for further information relative to the requirements for eligibility for licensure.

DEPARTMENT

The University reserves the right to request at any time the withdrawal of a student who cannot or does not maintain the required standard of scholarship, or whose continuance in the University would be detrimental to his or her health, or the health of others, or whose conduct is not satisfactory to the authorities of the University.

Students of the last classification may be asked to withdraw even though no specific charge be made against them.

EMPLOYMENT

A student should be prepared to finance his education during the entire period of attendance, as all of his time should be spent in the preparation

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and completion of the scheduled work. Baltimore offers a number of opportunities to secure suitable employment, but it is recommended that students refrain from working during the school session.

HOUSING

1. WOMEN

A limited number of women may obtain housing accommodations in the Louisa Parsons Hall, 622 West Lombard Street, which is in close proximity to the School of Pharmacy. It offers comfortable living accommodations and it is under the general supervision of the Dean of Women. Students are requested to bring their own bedspreads, blankets, pillows, bureau scarves, small rugs and a laundry bag. Students may obtain towels and bed linens through a designated commercial rental service. Although students may provide their own bed linens and towels they are not permitted to launder these items in Louisa Parsons Hall. The individual student assumes responsibility for all the dormitory property assigned to her. Any damage done to property other than that which results from ordinary wear and tear will be charged to the student concerned.

The room rates are as follows: Double Room per person, \$90.00 per semester; Single Room \$120.00 per semester; Single Room with Bath \$150.00 per semester. The room charge will appear on the student's bill payable at the time of registration.

Meals may be purchased at the Baltimore Union Cafeteria or in nearby restaurants.

2. MEN

Housing accommodations are available for men in The Baltimore Union. For particulars, see section immediately below.

GENERAL INFORMATION FOR THE BALTIMORE UNION

The Baltimore Union for students of the Professional Schools is located adjacent to the Professional Schools at 621 West Lombard Street. Accommodations for 195 men are provided in a five-story semi-air conditioned building which also contains a cafeteria, fountain lounge, meeting rooms, laundry facilities, game room, bookstore, barber shop and lounges on each floor. Double rooms are available. The rental agreement is made for rooms only; meals are served cafeteria style on a cash basis. The contract for accommodations covers the 1963-1964 academic year.

ACADEMIC YEAR

Double Room Rates:

\$150.00 per semester (per person)

\$ 80.00 per eight weeks summer session (per person)

What the Rate covers:

The rate shown above is per person and includes the following:

Room furnishings, bed and cover, mattress, chest of drawers, closet, book shelves, desk, medicine cabinet, desk chair and desk lamp. Maid service will include cleaning of room twice per week and replacement of change of linen once each week.

Telephone service is available through the Chesapeake & Potomac Telephone Company. Cost of the telephone is not included in the room rate. Information can be obtained from the Manager's office. Mail service is also provided.

The resident provides blankets, pillow, towels and linens of which the latter two must be rented through the designated commercial rental service.

A small amount of luggage space is available. Storage of anything other than luggage will *not* be available.

TRANSIENTS

The Rates are:

\$ 4.00 per day

\$24.00 per week

What the Rate covers:

The services will include one bath towel, one face towel, one face cloth, soap and change of linen daily (once per week if weekly guest).

HOW TO APPLY FOR A ROOM ASSIGNMENT

Write:

Manager's Office

The Baltimore Union

621 West Lombard Street

Baltimore, Maryland 21201

PARKING

The University of Maryland does not provide any parking facilities on university parking lots for students on the Baltimore Campus.

THE HEALTH SCIENCES LIBRARY

The library facilities are excellent. The new Health Sciences Library which serves the School of Pharmacy, as well as the Schools of Dentistry, Medicine, Nursing, and Social Work, contains over 88,400 bound volumes and regularly receives approximately 2,000 scientific periodicals.

The Rules and Regulations by the library are available for distribution to students at all times.

PROFESSORSHIPS, GRADUATE FELLOWSHIPS AND GRANTS

The Emerson Professorship of Pharmacology

Captain Isaac E. Emerson, of Baltimore, gave to the School of Pharmacy in 1927, a sum of money to establish a professorship of Pharmacology. The first appointment was made in 1930 when Dr. Marvin R. Thompson was designated Emerson Professor of Pharmacology. The chair was subsequently held by the late Dr. Clifford W. Chapman. Dr. Casimir T. Ichniowski, the present incumbent, was appointed June 15, 1951.

American Foundation for Pharmaceutical Education Fellowships

The American Foundation for Pharmaceutical Education offers annual fellowships of up to \$1800.00 for single persons or up to \$2400.00 for married individuals who are promising graduate students desirous of doing research in pharmacy, pharmaceutical chemistry, pharmacology, and pharmacognosy; students may also apply for an additional allowance up to \$600.00 for tuition, fees, and supplies. Address applications directly to the American Foundation for Pharmaceutical Education, 777 Fourteenth Street, N.W., Washington 5, D.C., between February 15 and March 15 for consideration for the forthcoming September.

The H.A.B. Dunning Research Fellowship

Dr. H. A. B. Dunning, an alumnus of the School of Pharmacy, former associate professor of chemistry, and prominent manufacturing pharmacist of Baltimore, has contributed annually since 1930 a sum of money to maintain a research fellowship in pharmaceutical chemistry. The fellowship is open to promising graduate students interested in pharmaceutical chemistry.

Centennial Research Fund Fellowships

At the celebration of the hundredth anniversary of the founding of the School of Pharmacy, a sum of money was collected to provide two

fellowships for research studies in the following fields: pharmacy, pharmaceutical chemistry, pharmacology, microbiology, and pharmacognosy. The selection of candidates for these fellowships will be made by the Faculty Assembly with the approval of the Dean.

The Noxzema Foundation Fellowship

The Noxzema Foundation, Inc., is contributing a fund not to exceed \$1600.00 for a graduate fellowship open to United States citizens. A candidate will be selected on the basis of his educational qualifications by the Fellowship Committee of the School of Pharmacy of the University of Maryland to which the Noxzema Foundation, Inc., may appoint a non-voting member. This fellowship may be renewed annually at the discretion of the grantors.

Research Grant of the Alumni Association of the School of Pharmacy

The Alumni Association of the School of Pharmacy gives to the School each year the sum of \$100.00 to be used as a research grant for a student selected by the Committee on the Research Grant of the Alumni Association to enable the student to engage in pharmaceutical research in the School of Pharmacy. The research conducted must be of general pharmaceutical interest and must be accepted upon completion for publication in one of the pharmaceutical journals.

The Edwin D. Stalfort and Arthur J. Stalfort Memorial Grant

In memory of Edwin D. Stalfort and Arthur J. Stalfort, the John C. Stalfort & Sons Company, Inc., of Baltimore, Maryland, has provided a grant of \$4000.00 per annum to the Department of Pharmacy to support pharmaceutical research. A portion of this grant is to be utilized to provide a graduate fellowship.

OTHER RESEARCH GRANTS

The Department of Pharmaceutical Chemistry has substantial grants from the Smith, Kline & French Laboratories, the National Institute of Mental Health and the National Cancer Institute. The Department of Anatomy and Physiology has been awarded grants as follows: two from the National Science Foundation and one each from the National Institutes of Health and the National Aeronautics and Space Administration. Through these grants, the School of Pharmacy is able to provide a number of research fellowships available to graduate and post-doctoral students in pharmaceutical chemistry and physiology.

SPECIAL GRANTS

Grant funds allotted by the Atomic Energy Commission to the Department of Anatomy and Physiology contributed substantially to the equipping of a radioisotope laboratory for the School of Pharmacy at Baltimore for training and research purposes.

The American Viscose Corporation has provided funds to the Department of Pharmacy for the procurement of specialized research equipment.

ASSISTANTSHIPS

Graduate Assistantships

Graduate assistantships, covering tuition and laboratory fees and carrying a stipend of \$2,000.00 for a ten-month academic year, are available to qualified students giving fourteen hours of laboratory and teaching services to the departments in which they serve. Such assistants can usually carry two-thirds of the normal graduate work.

Residencies in Hospital Pharmacy

1. University (of Maryland) Hospital

The Department of Pharmacy of the University Hospital together with the School of Pharmacy and the Graduate School of the University of Maryland offer annually, to qualified graduate pharmacists, residencies in hospital pharmacy. The appointments beginning July 1 are for twenty-four months. During the period of appointment the resident divides his time between hospital pharmacy service and graduate study leading to the Master of Science degree granted by the University of Maryland and a certificate of residency to be awarded by the University Hospital. Full time training will be required during the summer of 1964. Two weeks of vacation are allowed during the term of appointment. The University Hospital provides a stipend of \$2400.00 per year for the first year as Assistant Resident. Completion of the Assistant Residency leads to appointment as Resident with a stipend of \$3000.00 per year. Parking space, uniforms and laundering of uniforms are free of charge. The residents must pay the tuition, laboratory and other fees for graduate work in the University.

Complete information on this program may be secured by addressing inquiries to the Director of Pharmaceutical Service, University Hospital, Baltimore, Maryland 21201, or to the Dean of the School of Pharmacy, University of Maryland, Baltimore, Maryland 21201.

2. The Johns Hopkins Hospital Pharmacy

The Pharmacy Department of the Johns Hopkins Hospital, together with the School of Pharmacy and the Graduate School of the University of

Maryland, offer annually to qualified graduate pharmacists several residencies in hospital pharmacy. The appointments, beginning September 1, are for twenty-two months. During twenty months, appointees divide their time between hospital pharmacy service and graduate study leading to the Master of Science degree granted by the University of Maryland and a certificate of residency awarded by the Johns Hopkins Hospital. Full time training in the Johns Hopkins Hospital Pharmacy is required for two (2) months during the summer of 1964. Four weeks of vacation are allowed during the term of appointment. The Hospital provides a stipend of \$200.00 per month for the first year and \$250.00 per month thereafter and the School of Pharmacy reduces tuition fees for these candidates by 25%. However, candidates must pay the regular laboratory and other fees.

Complete information on this program may be secured by addressing inquiries to the Chief Pharmacist, Johns Hopkins Hospital, Baltimore, Maryland 21205, or the Dean of the School of Pharmacy, University of Maryland, Baltimore, Maryland 21201.

SCHOLARSHIPS AND LOANS (COLLEGE PARK CAMPUS)

All requests for information concerning College Park scholarships and loans should be directed to:

Director, Student Aid
University of Maryland
College Park, Maryland

*Alumni Association of the School of Pharmacy Scholarships**

The Alumni Association of the School of Pharmacy of the University of Maryland makes available annually scholarships to qualified pre-professional pharmacy students on the basis of worthiness, moral character, scholastic achievement and the need for financial assistance. These scholarships are open only to residents of the State of Maryland. Each scholarship not exceeding \$500.00 per academic year is applied in partial defrayment of fees and expenses at College Park.

*Maryland Pharmaceutical Association Scholarships**

The Maryland Pharmaceutical Association makes available annually scholarships to pre-professional pharmacy students on the basis of worthiness.

*These scholarships are awarded by the Committee on Scholarships and Grants-in-Aid of the University of Maryland in cooperation with the Scholarship Committee of the Alumni Association of the School of Pharmacy and the Maryland Pharmaceutical Association.

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ness, moral character, scholastic achievement and the need for financial assistance. Each scholarship not exceeding \$500.00 per academic year is used in partial defrayment of fees and expenses at College Park. These scholarships are open only to residents of the State of Maryland.

*Read's Drug Stores Foundation Scholarships**

The Read's Drug Stores Foundation contributes annually several scholarships to pre-professional pharmacy students on the basis of worthiness, scholastic achievement, moral character and the need for financial assistance. Each scholarship not exceeding \$500.00 per academic year is applied to defray partially the fees and expenses at College Park, Maryland. Recipients must have been residents of the State of Maryland for at least one year prior to the awarding of the scholarship.

For information concerning other scholarships and the loans available consult the University bulletin "Adventure in Learning" available from College Park, Maryland.

SCHOLARSHIPS AND LOANS (BALTIMORE CAMPUS)

All requests for information concerning scholarships should be addressed to Dean Noel E. Foss, School of Pharmacy, University of Maryland, 636 W. Lombard Street, Baltimore, Maryland 21201. The selection of the recipients of the scholarships and loans is made by the Dean in conjunction with a committee of the Faculty of the School of Pharmacy.

Alumni Association School of Pharmacy Scholarships

The Alumni Association of the School of Pharmacy of the University of Maryland makes available annually scholarships worth \$100.00 per semester to qualified students who have maintained a superior scholastic average and who are in need of financial assistance to complete their education.

Alumni Association University of Maryland Scholarship

The General Alumni Council of the University Alumni Association provides a scholarship in the amount of \$250.00. The award is based on scholarship, leadership and need.

*These scholarships are awarded by the Committee on Scholarships and Grants-in-Aid of the University of Maryland in cooperation with the Scholarship Committee of the Alumni Association of the School of Pharmacy and the Maryland Pharmaceutical Association.

American Foundation for Pharmaceutical Education Scholarships

The American Foundation for Pharmaceutical Education makes available scholarships worth \$100.00 per semester to qualified students of the Third, Fourth and Fifth Years.

The Charles Caspari, Jr., Memorial Scholarship

In memory of Prof. Charles Caspari, Jr., former Dean of the School of Pharmacy, a number of his friends and alumni have made an endowment for a scholarship worth \$100.00 annually.

The Henry B. Gilpin Company Scholarship

The Henry B. Gilpin Company, Baltimore Division, Maryland, contributed a scholarship for the 1963-64 academic year in the amount of \$400.00 to a student who has maintained a superior scholastic average and who is in need of financial aid.

The Charles Landon Henry Memorial Scholarship

In memory of her husband, Charles Landon Henry, for many years a member of the Maryland Pharmaceutical Association, Mrs. Nora Howard Henry has endowed a scholarship worth \$100.00 to be awarded annually by the Scholarship Committee of the School of Pharmacy, University of Maryland, to a Fifth Year student who has shown superior proficiency in practical and commercial pharmacy.

A. M. Lichtenstein Scholarship

In memory of her husband, A. M. Lichtenstein, distinguished alumnus of the School of Pharmacy, Class of 1889, the late Mrs. Francina Freese Lichtenstein bequeathed a sum of money to endow a scholarship to be awarded annually to a resident of Allegany County, Maryland. The recipient of the award is to be selected on the basis of financial need, character and scholarship.

The Noxzema Foundation Scholarships

The Noxzema Foundation, Inc., is contributing a fund to provide one or two undergraduate scholarships not to exceed \$500 each, open to citizens of the United States. Candidates will be selected on the basis of their educational qualifications by the Scholarship Committee of the School of Pharmacy of the University of Maryland to which the Noxzema Foundation, Inc., may appoint a non-voting member. This scholarship may be renewed annually at the discretion of the grantors.

*The Ladies' Auxiliary, Prince Georges-Montgomery County
Pharmaceutical Association Scholarship*

The Ladies' Auxiliary, Prince Georges-Montgomery County Pharma-

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ceutical Association provides a scholarship in the amount of \$50.00 to a student who has maintained a superior scholastic average and who is in need of financial aid.

Read's Drug Stores Foundation Scholarships

The Read's Drug Stores Foundation of Baltimore, Maryland, contributes funds to provide scholarships paying \$100.00 per semester to qualified students who have maintained a superior scholastic average and who are in need of financial assistance to complete their schooling.

Rose Hendler Memorial Loan Fund

L. Manuel Hendler and Family have established a loan fund in memory of Mrs. Rose Hendler for needy students. This fund is available to qualified students of the Fourth and Fifth years and loans therefrom are made upon the recommendation of the Dean.

NDEA Student Loans

The National Defense Education Act of 1958 provides funds for student loans. A student may borrow in one year a sum not exceeding \$800 and during his entire course of study may borrow a sum not exceeding \$5000. The borrower must sign a note for the loan and agree to interest and repayment terms established by the University. Repayment of the loan begins one year after the borrower ceases to be a full time student and must be completed within ten years thereafter. No interest is charged on the loan until the beginning of the repayment schedule. Interest after that date is to be paid at the rate of 3 per cent per annum.

HONORS AND AWARDS

University Scholarship Honors

Final honors for excellence in scholarship are awarded to not more than one-fifth of the graduating class in each college including the School of Pharmacy. The honor designations are listed in the commencement program and are recorded on the recipients' diplomas.

To be eligible for honors, pharmacy students must complete at least two academic years of resident work at Baltimore applicable for the degree of Bachelor of Science in Pharmacy with an average grade of B (3.0) or higher. Those in the first tenth of the class will graduate with High Honors and those in the second tenth of the class, with Honors.

The Dean's Honor List

The Dean publishes at the end of each semester a list of those students who have maintained an average of "B" or better during the semester.

Students whose names appear on the list both semesters receive the School's Academic Medal at the School of Pharmacy Convocations.

In computing the grade point standing for the Dean's Honor Roll, if a student repeats more than one course in any year, both grades earned for these courses will be averaged in determining grade point standing.

Phi Kappa Phi Honorary Fraternity

The University of Maryland Chapter of Phi Kappa Phi, a national fraternity for honor students in all branches of learning, was established at the University in 1920. Qualified students at the School of Pharmacy are eligible by invitation to join this honorary fraternity at the end of the first semester of the Third Year.

Rho Chi Honorary Pharmaceutical Society

Omicron Chapter of Rho Chi, national Honorary pharmaceutical society, was established at the University of Maryland in 1930. Charters for chapters of this organization are granted only to groups in schools or colleges who are members in good standing of the American Association of Colleges of Pharmacy. Eligibility for membership in the Society is based on high attainment in scholarship, character, personality, and leadership.

The School of Pharmacy Gold Medal

A gold medal is awarded annually to the candidate for the degree of Bachelor of Science in Pharmacy who has attained the highest general average, provided that this average is not below the grade of "B." Certificates of Honor are awarded to the three students having the next highest general averages, provided these averages do not fall below the grade of "B."

Honorable mention is made annually of the first three students of the Fourth Year Class having the highest general averages, provided these averages do not fall below the grade of "B."

Only courses taken at the School of Pharmacy at Baltimore are considered in awarding these honors.

The William Simon Memorial Prize

In honor of the late Dr. William Simon, for thirty years a professor of chemistry in the School of Pharmacy, a gold medal is awarded annually by the Faculty Assembly to a candidate for the degree of Bachelor of Science in Pharmacy who has done superior work in the field of practical and analytical chemistry. The recipient must stand high in all subjects. In recommending a student for the prize, the professor of chemistry is

guided in his judgment of the student's ability by observation and personal contact as well as by grades.

The Andrew G. DuMez Medal

In memory of Dr. Andrew G. DuMez, late dean and professor of pharmacy at the School of Pharmacy, Mrs. Andrew G. DuMez has provided a gold medal to be awarded annually by the Faculty Assembly to a candidate for the degree of Bachelor of Science in Pharmacy for superior proficiency in pharmacy.

The L. S. Williams Practical Pharmacy Prize

The late L. S. Williams left a trust fund, the income of which is awarded annually by the Faculty Assembly of the School of Pharmacy to the student having the highest general average throughout the course in practical and dispensing pharmacy.

The Conrad L. Wich Pharmacognosy Prize

In appreciation of assistance which the Maryland College of Pharmacy extended to him as a young man, Mr. Conrad L. Wich provided a fund, the income from which is awarded annually by the Faculty Assembly of the School to the Fifth Year student who has done exceptional work throughout the course in pharmacognosy.

The Wagner Pharmaceutical Jurisprudence Prize

In memory of her late husband, Mr. Manuel B. Wagner, and her late son, Mr. Howard J. Wagner, both alumni of the School of Pharmacy, Mrs. Sadie S. Wagner, together with her daughter, Mrs. Phyllis Wagner Brill, have provided a fund the income of which is awarded annually by the Faculty Assembly to a Fifth Year student for meritorious academic achievement in pharmaceutical jurisprudence.

David Fink Memorial Prize

In memory of David Fink, '24, Mr. Samuel I. Raichlen gives a new United States Dispensatory as a prize to the Fifth Year student recommended by the Faculty Assembly for proficiency in the general practice of pharmacy.

Phi Alpha Chapter, Rho Pi Phi Fraternity Cup

The Phi Alpha Chapter of the Rho Pi Phi Fraternity provides a cup to be awarded annually to the Fifth Year student selected by the Faculty Assembly as having exhibited outstanding qualities of character and leadership.

Alpha Zeta Omega Fraternity Prize

The Kappa Chapter and the Maryland Alumni Chapter of the Alpha Zeta Omega Fraternity provide a prize to be awarded annually to the Fifth Year student chosen by the Faculty Assembly for proficiency in pharmacology.

Epsilon Alumnae Chapter, Lambda Kappa Sigma Sorority Prize

The Epsilon Alumnae Chapter of the Lambda Kappa Sigma Sorority provides annually a key which is awarded to the Fifth Year student selected by the Faculty Assembly for outstanding proficiency in Pharmacy Administration.

Merck Award

Merck & Company, Inc., Rahway, New Jersey, offers a set of valuable reference books to the Fifth Year student who attains a high standing in pharmacy or pharmaceutical chemistry.

Bristol Laboratories, Inc., Award

A copy of Gould's "Medical Dictionary" is made available by Bristol Laboratories, Inc., to the Fifth Year student who has contributed the most to pharmacy through his extra-curricular activities.

Rexall Award

The Rexall Drug Company provides a Mortar and Pestle Trophy to the Fifth Year student who has demonstrated outstanding qualities of both leadership and scholarship.

Extra Curricular Awards

Students who have given freely of their time for the betterment of the School in extra-curricular activities, receive extra curricular keys at the School of Pharmacy Convocations.

STUDENT ORGANIZATIONS (BALTIMORE CAMPUS)

Student Government Alliance

The Student Government Alliance of the School of Pharmacy is an organization of undergraduate students established for the purpose of aiding in the internal administration of the school for organizing all extra-curricular programs and activities of the student body and for coordinating these programs and activities with those of the Faculty and Administration to

foster mutual understanding and cooperation. The Executive Council of the Student Alliance is composed of the President of the Student Government Alliance, the Presidents of the respective classes, and one delegate elected from each undergraduate class.

Student Branch of the American Pharmaceutical Association

The purpose of the Student Branch is to encourage in the broadest and most liberal manner the advancement of pharmacy as a science and as a profession in accordance with the objectives stated in the Constitution of the American Pharmaceutical Association, especially in fostering education in matters involving pharmacy in all of its branches and its application and aiding in promoting the public health and welfare.

Inter-Professional Student Senate

The students of the Baltimore Professional Schools of Dentistry, Law, Medicine, Nursing and Pharmacy established the Inter-Professional Student Senate for purposes of coordinating and facilitating relationships among the Professional Schools and the University Units at College Park. The Senate is comprised of representatives from each of the five professional schools.

Committee on School of Pharmacy of the Maryland Pharmaceutical Association (1962-1963)

When the School of Pharmacy became a part of the State University in 1920, the Maryland Pharmaceutical Association appointed a standing committee known as the Committee on the School of Pharmacy. The duties of this group are to represent the Association in all matters pertaining to the School of Pharmacy and pharmaceutical education. The present members of the Committee are:

Irving I. Cohen, *Chairman*
Joseph U. Dorsch, *Co-Chairman*

Halcolm S. Bailey
James P. Cragg, Jr.
Clinton W. Englander
Milton A. Friedman
Robert E. Lawson

Aaron M. Libowitz
Gordon A. Mouat
Samuel I. Raichlen
Henry G. Seidman
Morris R. Walman

ALUMNI ASSOCIATION

A meeting of the graduates of the School of Pharmacy of the University of Maryland, then the Maryland College of Pharmacy, was held on May 15, 1871. At this meeting there was organized the Society of the Alumni of the Maryland College of Pharmacy. This Society continued its

separate existence as such or as the Alumni Association of the Maryland College of Pharmacy until 1907, when the General Alumni Association of the University of Maryland was formed. Following the organization of the General Alumni Association, the Society remained dormant until June 4, 1926, when it was reorganized as the Alumni Association of the School of Pharmacy, University of Maryland. Each year it is more evident that interest in the Alumni Association is not only maintained, but is growing.

Officers (1962-1963)

Georgianna S. Gittinger	Honorary President
Sam A. Goldstein (1930)	President
Milton A. Friedman (1934)	1st Vice President
Robert J. Kokoski (1952)	2nd Vice President
Frank J. Slama (1924)	Executive Secretary
H. Nelson Warfield (1924)	Treasurer

Executive Committee (Elected Members)

James P. Cragg, Jr. (1943) — Chairman
Milton J. Brownstein (1934)
Thomas C. Dawson (1955)
Nathan I. Gruz (1939)
Casimir T. Ichniowski (1929)
Harold Levin (1943)
Vito Tinelli, Jr. (1961)

PROFESSIONAL CURRICULUM

COURSES, HOURS AND CREDITS

Title and Number of Course	First Semester				Second Semester			
	Hrs. Per Week				Hrs. Per Week			
	Didactic	Lab'y	Total	Credits	Didactic	Lab'y	Total	Credits
Third Year (Required)								
Anatomy 31, Mammalian Anatomy and Histology	2	6	8	4				
Pharmaceutical Chemistry 30, 32, Principles of Organic Chemistry	3	4	7	4	3	4	7	4
Pharmaceutical Chemistry 34, Quantitative Pharmaceutical Analysis					2	6	8	4
Pharmacy 31, Introduction to the Profession of Pharmacy	2		2	2				
Pharmacy 33, 34, Processes and Dosage Forms	3	3	6	4	3	3	6	4
Pharmacy 35, Professional Communications	3		3	3				
Pharmacy 38, History of Pharmacy					3		3	3
Pharmacy Administration 36, Accounting					2	3	5	3
				17				18
Fourth Year (Required)								
First Aid 1, Standard	1		1					
Microbiology 41, Pharmaceutical Microbiology	2	4	6	4				
Microbiology 146, Serology, Immunology, Public Health and Parasitology					2	4	6	4
Pharmaceutical Chemistry 149, Principles of Biochemistry	4	4	8	5				
Pharmacognosy 41, 42, General Pharmacognosy	2	3	5	3	2	3	5	3
Pharmacy 43, 44, Pharmaceutical Technology	2	4	6	3	2	4	6	3
Physiology 142, General Physiology					3	6	9	5
†Electives				3-4				3-4
				18-19				18-19
‡(Electives—General Pharmacy Major)								
Pharmacy Administration 41, Marketing	3		3	3				
Pharmacy Administration 42, Pharmacy Management I					2	3	5	3
‡(Electives—Pre-Graduate)								
Mathematics 20, 21, Calculus	4		4	4	4		4	4
Fifth Year (Required)								
Pharmacology 155, 156, General Pharmacology	3	3	6	4	4	3	7	5
Pharmacy 55, 56, Pharmaceutical Formulation Problems	1		1	1	1		1	1
or								
Pharmacy 151, Manufacturing Pharmacy	1	3	4	2				
Pharmacy 153, 154, Dispensing	2	3	5	3	2	3	5	3
Pharmacy Administration 51, 52, Pharmaceutical Jurisprudence	2		2	2	2		2	2
Pharmaceutical Chemistry 151, 152, Chemistry of Medicinal Products	3		3	3	3		3	3
†Electives				5				5
				18-19				19-18
‡(Electives—General Pharmacy Major)								
Pharmacognosy 51, Entomology for Pharmacists	2	3	5	3	3		3	3
Pharmacognosy 52, Animal Health Products								
or								
Pharmacy 156, Cosmetics and Dermatological Preparations					2	3	5	3
Pharmacy Administration 53, 54, Pharmacy Management II, III	2		2	2	2		2	2
‡(Electives—Hospital Major)								
Pharmacognosy 51, Entomology for Pharmacists	2	3	5	3				
Pharmacy 157, Hospital Pharmacy Administration	2		2	2				
Pharmacy 156, Cosmetics and Dermatological Preparations					2	3	5	3
Pharmacy 158, Orientation to Hospital Administration					2		2	2
‡(Electives—Pre-Graduate Major)								
Chemistry 187, 189, Physical Chemistry	3		3	3	3		3	3
Chemistry 188, 190, Physical Chemistry Laboratory		6	6	2		6	6	2

‡ The electives must be approved by the Class Advisor and Dean.

PROFESSIONAL CURRICULUM

SUMMARY OF HOURS AND CREDITS

Course	Didactic	Laboratory	Total	Credit Hours
Third Year (Required)				
Anatomy 31	32	96	128	4
Pharmaceutical Chemistry 30, 32	96	128	224	8
Pharmaceutical Chemistry 34	32	96	128	4
Pharmacy 31	32	-----	32	2
Pharmacy 33, 34	96	96	192	8
Pharmacy 35	48	-----	48	3
Pharmacy 38	48	-----	48	3
Pharmacy Administration 36	32	48	80	3
Total	416	464	880	35
Fourth Year (Required)				
First Aid 1	16	-----	16	-----
Microbiology 41	32	64	96	4
Microbiology 146	32	64	96	4
Pharmaceutical Chemistry 149	64	64	128	5
Pharmacognosy 41, 42	64	96	160	6
Pharmacy 43, 44	64	128	192	6
Physiology 142	48	96	144	5
†Electives	104†	24†	128†	6-8
Total	424	536	960	36-38
‡(Electives—Gen. Pharm. Major)	-----	-----	-----	-----
Pharmacy Administration 41	48	-----	48	3
Pharmacy Administration 42	32	48	80	3
‡(Electives—Pre-Graduate)	-----	-----	-----	-----
Mathematics 20, 21	128	-----	128	8
Fifth Year (Required)				
Pharmacology 155, 156	112	96	208	9
Pharmacy 55, 56	32	-----	32	2
or	-----	-----	-----	-----
Pharmacy 151	16	48	64	2
Pharmacy 153, 154	64	96	160	6
Pharmacy Administration 51, 52	64	-----	64	4
Pharmaceutical Chemistry 151, 152	96	-----	96	6
†Electives	120†	120†	240†	10
Total	504	360	864	37
‡(Electives—Gen. Pharm. Major)	-----	-----	-----	-----
Pharmacognosy 51	32	48	80	3
Pharmacognosy 52	48	-----	48	3
or	-----	-----	-----	-----
Pharmacy 156	32	48	80	3
Pharmacy Administration 53, 54	64	-----	64	4
‡(Electives—Hospital Major)	-----	-----	-----	-----
Pharmacognosy 51	32	48	80	3
Pharmacy 157	32	-----	32	2
Pharmacy 156	32	48	80	3
Pharmacy 158	32	-----	32	2
‡(Electives—Pre-Graduate Major)	-----	-----	-----	-----
Chemistry 187, 189	96	-----	96	6
Chemistry 188, 190	-----	192	192	4
SUMMARY				
Third Year	416	464	880	35
Fourth Year	424	536	960	36-38
Fifth Year	504	360	864	37
Total	1344	1360	2704	108-110*

† Average.

‡ The electives must be approved by the Class Advisor and Dean.

* A minimum of 108 credits required for students selecting either the General Pharmacy Major Course or the Hospital Major Course. A minimum of 110 credits required for students selecting the Pre-Graduate Major Course.

DESCRIPTION OF COURSES

PROFESSIONAL CURRICULUM

ANATOMY

31. MAMMALIAN ANATOMY AND HISTOLOGY. (4)

Third Year, first semester, two lectures and two laboratories.

(Costello and Darago.)

A study of the gross anatomy and histology of mammalian types. The course is designed to provide an understanding of the various anatomical systems, with particular emphasis on human structures.

FIRST AID

0. FIRST AID COURSE. (0)

Fourth Year, first semester, one lecture, one demonstration. Mr. Gregson, instructor from the Baltimore Chapter of the American Red Cross.

MATHEMATICS

20, 21. CALCULUS. (4, 4)

Fourth Year, four lectures.

(Dean.)

Prerequisite—Mathematics 15 and 17 and approval of instructor. Limits, derivatives, differentials, maxima and minima, curve sketching, rates, curvature, kinematics, integration, geometric and physical application on integration, partial derivatives, space geometry, multiple integrals, infinite series and differential equations.

For Graduates and Advanced Undergraduates

130. PROBABILITY. (3)

First semester. Prerequisite, Math. 21 or equivalent. Combinatory analysis, total, compound, and inverse probability, continuous distribution, theorems of Bernoulli and Laplace, theory of errors.

(Staff.)

132. MATHEMATICAL STATISTICS. (3)

Second semester. Prerequisite, Math. 21 or equivalent. Frequency distribution and their parameters, multivariate analysis and correlation, theory of sampling, analysis of variance, statistical inference.

(Staff.)

MICROBIOLOGY

41. PHARMACEUTICAL MICROBIOLOGY. (4)

Fourth Year, first semester, two lectures and two laboratories.

(Shay and Becker.)

Prerequisites, Pharmaceutical Chemistry 30, 32. This course is designed especially for pharmacy students and includes practice and theoretical consideration of bacteria, both pathogenic and nonpathogenic, viruses, rickettsia, yeasts and molds.

Laboratory teaching includes methods of staining and the preparation of media; cultural characteristics of bacteria; emphasis is given to the study of disinfectants, antiseptics, germicides and sterilization, antibiotics and their antibacterial action, microbiological assay, sensitivity testing and virus techniques. Experiments are included for the bacteriological evaluation of milk, water, food and air.

For Graduates and Advanced Undergraduates

146. SEROLOGY, IMMUNOLOGY, PUBLIC HEALTH AND PARASITOLOGY. (4)

Fourth Year, second semester, two lectures and two laboratories.

(Shay and Becker.)

Prerequisite, Microbiology 41. A study of the principles of immunity, including the preparation and use of biological products such as sera, vaccines, toxins, toxoids, etc. Special attention is given to hypersensitivity of humans and animals to sensitizing substances, drug idiosyncracies, hay fever, food allergies, contact dermatosis, and animal inoculation. Part of the course is devoted to the study of Public Health. Time is given to the study of medical parasitology, pathology and parasitic infections, immunity, transmission, diagnosis, treatment and prevention of parasitic diseases.

For Graduates

200, 201. CHEMOTHERAPY. (1, 1).

One lecture. (Given in alternate years.)

(Shay.)

A study of the chemistry, toxicity, pharmacology and therapeutic value of drugs employed in the treatment of parasitic diseases.

202, 203. REAGENTS AND MEDIA. (1, 1)

One lecture. (Given in alternate years.)

(Shay.)

A study of the methods of preparation and use of microbiological reagents and media.

210. SPECIAL PROBLEMS IN MICROBIOLOGY.

A laboratory course on selected problems in microbiology. Credit determined by the amount and quality of work performed.

(Shay.)

211. PUBLIC HEALTH. (1-2)

One lecture.

(Shay.)

Prerequisite, Microbiology 41, 146. Lectures and discussions on the organization and administration of state and municipal health departments and private health agencies. The courses will also include a study of laboratory methods.

399. RESEARCH IN MICROBIOLOGY.

Credit determined by the amount of work performed.

(Shay.)

PHARMACEUTICAL CHEMISTRY

30, 32. PRINCIPLES OF ORGANIC CHEMISTRY. (4, 4)

Third Year, two lectures, one recitation, one laboratory. (Miller and Whang.)
A study of the principles of organic chemistry.

34. QUANTITATIVE PHARMACEUTICAL ANALYSIS. (4)

Third Year, second semester, two lectures and two laboratories.

(Zenker and Vora.)

Prerequisites, Pharmaceutical Chemistry 30, 32 or equivalent. A study of quantitative analytical methods applied to the chemical assay of crude drugs and official preparations with emphasis on instrumental methods.

For Graduates and Advanced Undergraduates

141, 143. ADVANCED ORGANIC CHEMISTRY. (2, 2)

Two lectures.

(Miller.)

Prerequisites, Chemistry 35, 36, 37, 38, or equivalent. An advanced study of the compounds of carbon.

144. ADVANCED ORGANIC LABORATORY. (2)

Two laboratories.

(Miller.)

Prerequisite, Chemistry 37, 38 or equivalent. Laboratory work devoted to more complicated organic preparations.

146, 148. IDENTIFICATION OF ORGANIC COMPOUNDS. (2, 2)

One lecture, two laboratories.

(Miller and Doorenbos.)

Prerequisite, Chemistry 141, 143, or equivalent. The systematic identification of organic compounds.

149. PRINCIPLES OF BIOCHEMISTRY. (5)

Fourth Year, first semester, four lectures and one laboratory.

(Zenker.)

Prerequisites, Pharmaceutical Chemistry 32, 34. Lectures and laboratory exercises devoted to the composition of living organisms and the chemical and physical processes which occur during health and in disease.

151, 152. CHEMISTRY OF MEDICINAL PRODUCTS. (3, 3)

Fifth Year, three lectures.

(Doorenbos.)

Prerequisites, Pharmaceutical Chemistry 30, 32. A survey of the structural relationships, synthesis and chemical properties, principally of organic medicinal products.

187, 189. PHYSICAL CHEMISTRY. (3, 3)

Fifth Year, three lectures.

(Weiner and Guyton.)

Prerequisites, Chemistry 15, 35, 37, Physics 10, 11, Math. 20, 21. A study of the laws and theories of chemistry, including the gas laws, kinetic theory, liquids, solutions, elementary thermodynamics, thermochemistry, equilibrium, chemical kinetics and electrochemistry.

188, 190. PHYSICAL CHEMISTRY. (2, 2)

Fifth Year, two laboratories.

(Weiner and Guyton.)

Prerequisites, Chemistry 187, 189 or concurrent registration. Quantitative experiments are performed which demonstrate physio-chemical principles, and acquaint the student with precision apparatus.

For Graduates

230. SEMINAR. (1)

Each semester.

(Staff.)

Required of students majoring in pharmaceutical chemistry. Reports of progress and survey of recent developments in chemistry.

232. ADVANCED ORGANIC SYNTHESIS. (2)

Two laboratories.

(Miller and Doorenbos.)

Prerequisite, Chemistry 144. Library and laboratory work designed to offer experience in the more difficult organic syntheses and in new techniques.

235. PRINCIPLES OF STEREOCHEMISTRY. (2)

Two lectures.

(Miller.)

Prerequisites, Chemistry 141, 143. A study of the principles of stereochemistry of organic compounds.

242. HETEROCYCLIC CHEMISTRY. (2)

Two lectures.

(Doorenbos.)

Prerequisite, Chemistry 141, 143. A study of the chemistry and synthesis of heterocyclic compounds.

250. STEROIDS. (2)

Two lectures.

(Doorenbos.)

Prerequisites, Chemistry 141, 143. A study of the synthesis and structure determination of steroids and the application of modern chemical concepts to the chemistry of steroids.

252. ALKALOIDS. (2)

Two lectures.

(Miller.)

Prerequisites, Chemistry 141, 143. A study of the principles involved in structure determination, chemistry and synthesis of the major alkaloidal classes.

253, 254. ADVANCED CHEMISTRY OF MEDICINAL PRODUCTS. (2, 2)

Two lectures.

(Doorenbos.)

Prerequisites, Chemistry 151, 152 and Pharmaceutical Chemistry 141, 143 or permission of the instructor. A study of structural relationships and basic principles concerned with the physical and chemical mechanisms of drug action, e.g., structure-activity relationships, physical properties and biological activity, cellular transport, drug, protein binding, biological receptors, lipid storage and physico-chemical mechanisms of drug action.

255. INSTRUMENTAL METHODS OF ANALYSIS. (2)

Either semester, two laboratories.

(Zenker.)

Prerequisites, Chemistry 187, 188, 189, 190 or equivalent.

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271, 272. SELECTED TOPICS IN PHYSICAL CHEMISTRY. (2, 2)

Two lectures.

Prerequisite, Chemistry 189. A discussion of selected topics of particular interest in the pharmaceutical sciences, including colloids, surface chemistry, kinetics, absorption spectroscopy, dipole moments and the behavior of molecules in electric and magnetic fields.

274. ADVANCED PHYSICAL CHEMISTRY LABORATORY. (1)

One laboratory.

Prerequisite, Chemistry 190. Selected experiments which are necessary for, and a part of, a larger research effort.

281. PHARMACEUTICAL BIOCHEMISTRY. (2)

Two lectures.

(Zenker.)

Prerequisite, Pharmaceutical Chemistry 149. A discussion of the relationships between drugs and enzymes, with emphasis on drug action at the enzymatic level and on drug metabolism.

282. PHARMACEUTICAL BIOCHEMISTRY LABORATORY. (2)

Two laboratories.

(Zenker.)

Prerequisite, Pharmaceutical Chemistry 281 or permission of the instructor. Laboratory experiments designed to illustrate the use of modern techniques and metabolic methods in the study of drug action and drug metabolism.

399. RESEARCH IN PHARMACEUTICAL CHEMISTRY.

Credit determined by the amount and quality of work performed. (Staff.)

PHARMACOGNOSY

41. PHARMACOGNOSY, GENERAL. (3)

Fourth Year, first semester, two lectures and one laboratory.

(Slama and Kokoski.)

Prerequisites, Anatomy 31, Pharmaceutical Chemistry 30, 32. A study of the cultivation, collection, and commerce of crude vegetable drugs with special emphasis on the physical and microscopical characteristics used in their identification and in the detection of adulteration.

42. PHARMACOGNOSY, GENERAL. (3)

Fourth Year, second semester, two lectures and one laboratory.

(Slama and Kokoski.)

Prerequisite, Pharmacognosy 41. A continuation of Pharmacognosy 41 with instruction covering drugs of animal origin and allergy-producing pollens. Special emphasis is placed upon official and non-official chemical tests used in the identification of drugs and their constituents.

51. PHARMACOGNOSY, ENTOMOLOGY FOR PHARMACISTS. (3)

Fifth Year, first semester, two lectures and one laboratory.

(Slama and Kokoski.)

Prerequisites, Pharmacognosy 41, 42.

A discussion of the principal types of pests commonly found in the household

and the industries, including those which attack farm and garden crops; their recognition, life history, and methods of control.

52. PHARMACOGNOSY, ANIMAL HEALTH PRODUCTS. (3)

Fifth Year, second semester, three lectures.

(Slama.)

Prerequisites, Pharmacognosy 41, 42; Pharmacology 155.

A study of principal pharmaceutical agents that are used in the treatment and prevention of animal diseases.

For Graduates and Advanced Undergraduates

101, 102. TAXONOMY OF THE HIGHER PLANTS. (2, 2)

One lecture and one laboratory. Given in alternate years.

(Slama.)

Prerequisites, Pharmacognosy 41, 42. A study of the kinds of seed plants and ferns, their classifications, and field work on local flora. Instruction will be given in the preparation of an herbarium.

111, 112. PLANT ANATOMY. (4, 4)

Two lectures and two laboratories.

(Slama.)

Prerequisites, Pharmacognosy 41, 42. Lectures and laboratory work covering advanced plant anatomy with special emphasis placed on the structure of roots, stems and leaves of vascular plants.

For Graduates

201, 202. ADVANCED STUDY OF VEGETABLE POWDERS. (4, 4)

Two lectures and two laboratories.

(Slama.)

Prerequisites, Pharmacognosy 111, 112. A study of powdered vegetable drugs and spices from the structural and microchemical standpoints, including practice in identification and detection of adulterants. Given in alternate years.

211, 212. ADVANCED PHARMACOGNOSY. (4, 4)

Two lectures and two laboratories.

(Slama.)

Prerequisites, Pharmacognosy 111, 112. A study of many crude drugs not ordinarily studied in other pharmacognosy courses. Special attention will be given to practical problems and to the identification and detection of adulterants.

399. RESEARCH IN PHARMACOGNOSY.

Credit according to the amount and quality of work performed.

(Slama.)

PHARMACOLOGY

For Graduates and Advanced Undergraduates

155, 156. PHARMACOLOGY, GENERAL. (4, 5)

Fifth Year, three lectures and one laboratory first semester; four lectures and one laboratory second semester.

(Ichniowski and Staff.)

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Prerequisites, Physiology 142; Pharmaceutical Chemistry 149 or consent of the instructor. A study of the pharmacology, toxicology, posology, untoward effects, precautions and therapeutic applications of medicinal substances.

171. OFFICIAL METHODS OF BIOLOGICAL ASSAY. (4)

Two lectures and two laboratories.

(Ichniowski.)

Prerequisites, Pharmacology 155, 156. A study of the methods of biological assay official in the United States Pharmacopoeia and the National Formulary.

For Graduates

201, 202. METHODS OF BIOLOGICAL ASSAY. (4, 4)

Laboratory and conferences, first and second semesters.

(Ichniowski.)

Prerequisite, Pharmacology 171. Offered in alternate years.

211, 212. SPECIAL STUDIES IN PHARMACODYNAMICS. (4, 4)

Laboratory and conferences, first and second semesters.

(Ichniowski.)

Prerequisites, Pharmacology 155, 156, and the approval of the instructor. Offered in alternate years.

221, 222. SPECIAL STUDIES IN BIOLOGICAL ASSAY METHODS. (2-4), (2-4)

Credit according to the amount of work undertaken after consultation with the instructor. Conferences and laboratory work.

(Ichniowski.)

Prerequisites, Pharmacology 171, 201, 202. Special problems in the development of biological assay methods and comparative standards.

399. RESEARCH IN PHARMACOLOGY.

Properly qualified students may arrange with the instructor for credit and hours.

(Ichniowski.)

PHARMACY

31. INTRODUCTION TO THE PROFESSION OF PHARMACY. (2)

Third Year, first semester, two lectures and one recitation.

(Levine.)

Orientation, brief introduction to the nature and ethical relations of pharmacy to the health professions and the public as well as a consideration of pharmaceutical calculations.

33, 34. PROCESSES AND DOSAGE FORMS. (4, 4)

Third Year, three lectures and one laboratory.

(Levine, Richman, Block and Augsburger.)

Pharmacy 31 and 33 are prerequisites to Pharmacy 34. Commentary on the official compendia of pharmacy. Includes pharmaceutical manipulations and processes for preparing official dosage forms. Particular emphasis is placed on physical and chemical properties of ingredients, common nomenclature and synonyms, storage conditions and uses.

35. PROFESSIONAL COMMUNICATIONS. (3)

Third Year, first semester, three lectures.

(Ballman and Shangraw.)

Pharmacy literature and expression. A survey of the literature of pharmacy, bibliographical methods, oral and written reports on subjects of pharmaceutical interest. The use of audio-visual aids.

38. HISTORY OF PHARMACY. (3)

Third Year, second semester, three lectures.

(Kokoski.)

A survey of the history of pharmacy and the allied sciences, with emphasis on those aspects of science most pertinent to the interests of the pharmacist. Research papers and reports required.

43, 44. PHARMACEUTICAL TECHNOLOGY. (3, 3)

Fourth Year, two lectures, one laboratory and one recitation.

(Shangraw and Augsburg.)

Prerequisites, Pharmacy 31, 33 and 34. The physical-chemical principles involved in pharmaceutical systems and the application of this knowledge to the development, preparation and packaging of medicinal formulations.

55, 56. PHARMACEUTICAL FORMULATION PROBLEMS. (1, 1)

Fifth Year, one lecture.

(Allen.)

Prerequisite, Pharmacy 44. Practical work in solving problems dealing with weights and measures employed in pharmacy during the handling of drugs and medicines. Special emphasis is given to problems useful in the manufacture of pharmaceuticals.

For Graduates and Advanced Undergraduates

151. MANUFACTURING PHARMACY. (2)

Fifth Year, first semester, one lecture and one laboratory.

(Shangraw and Staff.)

Prerequisite, Pharmacy 44. Limited to students having a grade point average of 2.5 or above. A study of manufacturing processes and equipment. Special attention is given to tablet compression and coating, solid and liquid mixing, aerosol, emulsion and ointment type products, and control procedures in the production of pharmaceuticals.

153, 154. DISPENSING PHARMACY. (3, 3)

Fifth Year, two lectures and one laboratory.

(Allen and Staff.)

Prerequisite, Pharmacy 44. Professional laboratory practice and other specialized activities pertaining to prescriptions, including an evaluation of compounding aids and commercial pharmaceuticals.

156. COSMETICS AND DERMATOLOGICAL PREPARATIONS. (3)

Fifth Year, second semester, two lectures and one laboratory.

(Allen and Staff.)

Prerequisite, Pharmacy 153. A study of the composition and manufacture of preparations including laboratory work in the formulation of cold cream, vanishing cream, protective cream, hand lotion, hair tonic, shampoo, face powder, dusting powder, lipstick, mascara, toothpaste, deodorants, depilatories, suntan preparations, etc. The acid-mantle of the skin and hypoallergenic preparations are also emphasized.

157. HOSPITAL PHARMACY ADMINISTRATION. (2)

Fifth Year, first semester, two lectures.

(Purdum.)

Prerequisite, Pharmacy 44. The fundamentals of hospital pharmacy practice and administration. Includes a study of the history and development of hospital pharmacy, physical facilities, minimum standards, purchasing, the formula, manufacturing, record keeping and dispensing practices, with supervised practical experience in selected hospital pharmacies.

158. ORIENTATION TO HOSPITAL ADMINISTRATION. (2)

Fifth Year, second semester, two lectures.

The increasing role of the hospital in general health facilities and the increasing responsibility of the pharmacist in hospital activities necessitate some orientation in hospital administration. The course will consist of a discussion of the history and development of hospitals, classification of hospitals, organization, governing authorities, the administrator, the medical staff, and special departments of the hospital, including pharmacy, nursing, dietary, engineering, accounting, housekeeping, laundry, purchasing, public relations and personnel.

For Graduates

201, 202. INDUSTRIAL PHARMACY. (3, 3)

Three lectures. Given in alternate years.

(Shangraw.)

Prerequisites, Pharmacy 153, 154. A study of manufacturing processes, control procedures and equipment employed in the manufacture of pharmaceuticals on a commercial scale, including new drug applications, patents and the Federal Food, Drug and Cosmetic Act.

203, 204. INDUSTRIAL PHARMACY. (2, 2)

Two laboratories.

(Shangraw.)

Prerequisites, Pharmacy 201, 202, or may be taken simultaneously with Pharmacy 201, 202. Laboratory work dealing with the preparation of useful and important pharmaceuticals in large quantities.

207, 208. PHYSICAL PHARMACY. (2, 2)

Two lectures a week.

(Shangraw.)

Prerequisites, Physical Chemistry 187, 188, 189, 190. A study of pharmaceutical systems utilizing the fundamentals of physical chemistry.

211, 212. SURVEY OF PHARMACEUTICAL LITERATURE. (1, 1)

One lecture. Given in alternate years.

(Allen.)

Lectures and topics on the literature pertaining to pharmacy, with special reference to the origin and development of the works of drug standards and the pharmaceutical periodicals.

215, 216. PRODUCT DEVELOPMENT. (2, 2)

Two laboratories.

(Allen.)

Prerequisites, Pharmacy 156, 201, 202, 203, 204. A study of the development of new pharmaceutical preparations and cosmetics suitable for marketing.

221, 222. HISTORY OF PHARMACY. (2, 2)

Two lectures.

(Purdum.)

Lectures and assignments on the development of pharmacy in America and the principal countries of Europe. Given in alternate years.

230. PHARMACEUTICAL SEMINAR. (1)

Each semester.

(Allen.)

Required of students majoring in pharmacy. Reports of progress in research and surveys of recent developments in pharmacy.

231, 232. SPECIAL PROBLEMS IN PHARMACEUTICAL TECHNOLOGY. (2, 2)

Two laboratories.

(Allen.)

A study of technical problems in the stabilization and preservation of pharmaceuticals and the various methods of compounding special prescriptions.

399. RESEARCH IN PHARMACY.

Credit and hours to be arranged.

(Foss, Purdum, Allen, and Shangraw.)

PHARMACY ADMINISTRATION

36. ACCOUNTING. (3)

Third Year, second semester, two lectures and one laboratory.

(Leavitt and Augsburg.)

The analysis of financial and operating statements, especially as it concerns retail drug stores and other drug establishments, with a study of the fundamental principles of accounting, including practice in bookkeeping.

41. DRUG MARKETING. (3)

Fourth Year, first semester, three lectures.

(Leavitt.)

Prerequisite, Economics 37 or its equivalent. This is an introductory course in the field of marketing with special emphasis on the marketing of drug products. Its purpose is to give a general understanding and appreciation of the forces operating, institutions employed, and methods followed in marketing drug products, natural products, services, and manufactured goods.

42. PHARMACY MANAGEMENT I. (3)

Fourth Year, second semester, two lectures and one laboratory.

(Leavitt.)

Prerequisite, Pharmacy Administration 41. A study of store arrangement, window and interior display, advertising, merchandising, selling and salesmanship, and public and professional relations.

51, 52. PHARMACEUTICAL JURISPRUDENCE. (2, 2)

Fifth Year, two lectures.

(Kaufman.)

Fundamentals of law of importance to pharmacists; Federal and State laws and regulations pertaining to the sale of drugs, narcotics, poisons, cosmetics and pharmaceutical preparations; Law of Contracts, Negotiable Instruments, Sales, Agency and Partnerships.

53, 54. PHARMACY MANAGEMENT II, III. (2, 2)

Fifth Year, two lectures.

(Leavitt.)

Prerequisite, Pharmacy Administration 42. A study of the business problems of retail pharmacy, including ownership organization, financing, leasing, insurance, purchasing and inventory control.

PHYSIOLOGY

For Graduates and Advanced Undergraduates

142. GENERAL PHYSIOLOGY. (5)

Fourth Year, second semester, three lectures and two laboratories.

(Costello and Darago.)

Prerequisite, Anatomy 31. A course in the fundamentals of mammalian physiology including the structure and permeability of the cell membrane, neurophysiology, muscle physiology, the circulatory system, the respiratory system, the digestive system, the excretory system, endocrinology, metabolism, and the special senses.

For Graduates

245. CELLULAR PHYSIOLOGY AND CYTOGENETICS. (3)

First semester, three lectures.

(Costello.)

Prerequisites, Pharmaceutical Chemistry 149, Physiology 142. Consent of instructor. The lectures will relate to the physical and chemical properties of protoplasm to the functional problems of the plasma membrane, cytoplasm, golgi apparatus, microsomes, nucleus, mitochondrial structure and their contributions to the integrated cellular activity. The physical and chemical phenomena of cell division and inheritance will be discussed.

246. RADIOISOTOPE TECHNIQUE. (3)

Second semester, one lecture and two laboratories.

(Costello.)

Prerequisites, consent of instructor. A course concerned with the practical use of isotopes particularly as tracers in metabolic investigations.

399. RESEARCH IN PHYSIOLOGY.

Credit determined by the amount and quality of work performed. (Costello.)

ROLL OF STUDENTS, SESSION 1962-63

Graduate Students †

Augsburger, Larry L.	Maryland
Barnett, Lisa	Maryland
Bednarczyk, Leonard R.	Maryland
‡Bianco, Henry J., Jr.	Maryland
§Blau, Eugene R.	New York
‡Block, Lawrence H.	Maryland
Bossle, Paul C.	Louisiana
Brown, Sister Jane M.	Maryland
Darago, Lillian L.	Maryland
DeSchepper, Paul	Belgium
Diamond, Louis	Maryland
Doane, Marshall G.	Maryland
Duda, Marija	Maryland
Duffy, Thomas	Maryland
Fox, Chester D.	New York
Fried, Irving M.	Maryland
Goldsmith, Robert H.	Maryland
Guyton, Charles L.	Mississippi
§Hamet, Sidney H.	Maryland
‡Heifetz, Carl	Maryland
Henderson, Edward G.	Maryland
Inguanti, Luciano	Maryland
Koch, Stanley A.	District of Columbia
Konopik, Barbara H. (Shroff)	Maryland
§Kosmicke, Joan	Nebraska
Lesko, Stephen A., Jr.	Pennsylvania
Levine, Phillip J.	Rhode Island
Milkowski, John D.	Maryland
McDonald, Donald E.	Pennsylvania
McMillion, C. Robert	Maryland
Nakagawa, Masako	Japan
Reier, George E.	Maryland
Richman, M. David	Maryland
Ringe, Ingrid	New York
Scott, Kenneth R.	District of Columbia
Simon, Stuart H.	Illinois
Smith, Rodney F.	Maryland
Smith, Willard N.	Maryland
Stein, Martin E.	Maryland
Tinney, Francis J.	New York
Tocci, Paul M.	Maryland
Vora, Kakubhai M.	India
Wagner, Frederick H.	Maryland
Walkling, Walter D.	Maryland

§ Did not attend entire session

‡ Second Semester only

† Registered in Graduate School

UNIVERSITY OF MARYLAND

Wang, Theodore S. T.	China
Warfield, Albert H.	Maryland
Warthen, John D.	Maryland
Whang, Clara	District of Columbia

Senior Class (Four Year Program)

Abel, Walter H.	Maryland
Abramovitz, Marjorie S.	Maryland
Adair, Carole S.	Maryland
Antwarg, Alvin G.	Maryland
Baker, Jeanne A.	Maryland
Banks, David E.	Maryland
Barron, David D.	Maryland
Batt, William H.	Maryland
Benson, Michael T.	Maryland
Blake, David A.	Maryland
Bradenbaugh, Don L.	Maryland
Brownstein, Marshall P.	Maryland
Caplan, Yale H.	Maryland
Caple, Arthur N.	Maryland
Chang, Gloria	Maryland
Cohen, Michael D.	Maryland
Cornias, William N.	Maryland
Fader, John F.	Maryland
Friedel, Stuart L.	Maryland
Henderson, Robert W.	Maryland
Heyman, Irwin A.	Maryland
Hopkins, Ronald M.	Maryland
Jacobs, M. Neal	Maryland
Kadish, Aaron C.	Maryland
Keller, Thomas H., Jr.	Maryland
Kuchinsky, Victoria W.	Maryland
Levi, Henry M.	Maryland
Levin, Stephen P.	Maryland
Mendelsohn, James F.	Maryland
Newman, Jerome	Maryland
§Nowakowski, Ronald	Maryland
Pariser, Joseph	Maryland
Patel, Barbara F.	California
Perzynski, Paul R.	Maryland
Pilson, Robert M., Jr.	Maryland
Price, Chester L.	Maryland
Reinke, Budne C.	Maryland
Ritchie, James R.	Maryland
Sapperstein, Alan E.	Maryland
Scholtz, Frank W.	Maryland
Schultz, Lawrence M.	Maryland

§ Did not attend entire session

Shaner, Daniel S.	Maryland
Shargel, Leon D.	Maryland
Sobczak, Valentine R.	Maryland
Sober, Julian N.	Maryland
Spak, Allen	Maryland
Tristani, Ettore M.	Maryland
Ullman, Kenneth C.	Maryland
Welsh, James J.	Maryland
Wilson, John W.	Maryland
Winakur, Stuart	Maryland
Woods, Dennis S.	Maryland
Yee, Susan	Maryland
Zimmer, Reid A.	Maryland

Fourth Year (Five Year Program)

DelCastilho, Ronald E.	Maryland
Wynn, Richard L.	Maryland

Third Year (Five Year Program)

*Adams, Patricia M.	Maryland
Brauner, Robert P.	New York
Brundelre, Robert	Maryland
Catlett, Leon R.	Maryland
Cavoures, James A.	Maryland
Conrad, John W.	Maryland
Cooney, John R.	Maryland
Cysyk, Richard L.	Maryland
Dolecek, Gayle R.	District of Columbia
Elliott, William R.	Maryland
Frangakis, Mina S.	Maryland
Gamerman, Marvin I.	Maryland
Glover, Wayne A.	Maryland
Goldberg, Marvin	Maryland
Goldman, William I.	Maryland
Goldstein, Mark N.	Maryland
Henderson, Robert L.	Maryland
Hoffman, Robert W.	Maryland
Kroopnick, Robert B.	Maryland
Libowitz, Suzanne J.	Maryland
Miller, Harris L.	Maryland
Mintz, Martin B.	Maryland
Myers, Mary L.	Maryland
Rachanow, Gerald M.	Maryland
Rayman, Marsha J.	District of Columbia

* First semester only

UNIVERSITY OF MARYLAND

Schutz, Charles J.	Maryland
Sollod, Ralph M.	Maryland
*Tannebaum, Stanley B.	Maryland
Walsh, Michael J.	Maryland
Williams, Cornelius B.	Maryland
Wolfson, Israel D.	Maryland

SCHOOL OF PHARMACY AT COLLEGE PARK

Second Year

*Alatzes, George T.	Maryland
Baer, Carol A.	Maryland
Bloom, Barry L.	Maryland
*Blum, Jerold P.	Maryland
Bush, Francis E.	District of Columbia
Christian, Mitchell A.	Maryland
Cohen, Michael J.	Maryland
Courpas, Anthony L.	Maryland
Davidson, Harvey S.	Maryland
Donnelly, John A.	Maryland
Edmondson, William H.	Maryland
Eng, Frederick	Maryland
Erdman, Sheldon N.	Maryland
Fahres, Michael H.	Maryland
Fine, Norman F.	Maryland
Fischer, Bernard A.	Maryland
Fleischer, Charles A.	Maryland
*Gorrell, David J.	Maryland
Goulden, James R.	Maryland
Greek, David C.	Connecticut
Heer, Roger G.	Maryland
Heer, Ronald W.	Maryland
Hess, Gary L.	Maryland
*Hill, Carol J.	Maryland
*Hoffman, Ronald H.	Maryland
Hughes, Edward L.	Maryland
Jaskowitz, Theodore J.	Maryland
Johnson, Eugene M.	Maryland
†Kovalsky, Paul	Maryland
*Legum, Gary	Maryland
Lehman, Allan G.	Maryland
Lessing, Melvin	Maryland
*Lindenbaum, Ronald L.	Maryland
*MacConney, Charles S.	Maryland
Martin, Lawrence L.	Maryland
McCabe, Stanley B.	Maryland
Meyer, Howard B.	Maryland

* First semester only

† Second semester only

Moore, William C.	Delaware
Morton, Jacquelin G.	Maryland
Musch, Robert A.	Maryland
Myers, John E.	Maryland
Myers, Ronald J.	Maryland
Neiner, Joan M.	Maryland
†Owens, James	Maryland
Pincus, Jack H.	Maryland
Pletka, George J.	Maryland
*Robinson, Larry D.	Maryland
Ryon, James N.	Maryland
Santell, Fredrica A.	Maryland
Seechuk, William W.	Maryland
*Seff, Gerald L.	Maryland
Sherman, Howard	Maryland
*Shure, Joanna C.	Maryland
*Spuras, Jenina D.	Maryland
*Taylor, Charles D.	Maryland
Theil, Kenneth W.	Maryland
Tims, John M.	Maryland
Trinkley, Kenneth P.	Maryland
†Via, David	Maryland
Vykol, Frank J.	Maryland
Weiner, Myron	Maryland
Welsh, Patrick G.	Maryland
Williams, Matt E.	Maryland
*Wilson, Thomas W.	Maryland

SCHOOL OF PHARMACY AT COLLEGE PARK

First Year

*Alpert, Charles M.	Maryland
Balch, John H.	Maryland
Berglund, Richard L.	Maryland
Blitz, Alvin M.	Maryland
Bloom, Martin G.	Maryland
Boyer, Wayne S.	Maryland
Branch, Arthur S.	Maryland
†Cohen, Marvin	Maryland
†Cronin, Dennis	Maryland
David, Stephen T.	Maryland
Dondero, David L.	Maryland
Efner, Linnea D.	Maryland
*Erkis, Michele R.	Maryland
Feldman, Neil	Maryland
Frankenfeld, Frederick M.	Maryland
*Glazer, Harold A.	Maryland

* First semester only

† Second semester only

UNIVERSITY OF MARYLAND

Golob, Jerrold J.	Maryland
Goodman, Philip L.	Maryland
*Gordon, David L.	Maryland
†Griffiths, Robert	Maryland
Groman, Alvin D.	Maryland
*Gull, Michael A.	Maryland
Harper, Robert D.	Maryland
Heymann, Richard W.	Maryland
†Hoffman, Sheldon	Maryland
Hommerbocker, Barry A.	Maryland
Honkofsky, Arnold J.	Maryland
Horwitz, Michael R.	Maryland
*Janofsky, Stephen L.	Maryland
Jaskulski, Alan J.	Maryland
Kirchner, Theodore N.	District of Columbia
Leister, Dennard L.	Maryland
*Levin, Denyse B.	Maryland
†Nadell, Terry	Maryland
*Naughton, Charles E.	Maryland
Oliver, Patricia A.	Maryland
Pailthorp, Charles J.	Maryland
Polievka, Frank J.	District of Columbia
*Rehwaldt, Don	Maryland
†Ricci, John	Maryland
Samios, William A.	Maryland
*Sexton, Ronald A.	Maryland
Skalinski, Richard A.	Maryland
Sklaroff, Mark N.	Maryland
Smith, Earl T.	Maryland
Stromberger, Henry R.	Maryland
*Swain, George B.	Maryland
*Trakas, George J.	Maryland
Uphoff, Frederick G.	Maryland
Walman, Eugene S.	Maryland
Watson, George W.	Maryland
Weiner, Alan I.	Maryland
Will, Marcia A.	Maryland
*Zolenas, Stanley P.	Maryland

ROLL OF GRADUATES, JUNE 9, 1962

Doctor of Philosophy

Patel, Nagin K.	India
Shroff, Arvin P.	India

*First semester only

†Second semester only

Master of Science

Kopcho, Michael J.	New Jersey
Thomason, Melvin R.	Colorado

Bachelor of Science in Pharmacy

Amernick, Harmond Hersh	Maryland
Augsburger, Larry Louis	Maryland
Becker, Edward Philip	Maryland
Blaustein, Arnold Lee	Maryland
Block, Lawrence Howard	Maryland
Boatman, Ernest Allan	Maryland
Calas, Andre Thomas	Maryland
Clinger, Richard Graham	Pennsylvania
Contrino, Gabriel Michael	Maryland
Gandel, Stephen Jay	Maryland
Gibbon, Nancy Lee	Maryland
Grubb, John Eastman	Maryland
Gubinsky, Louis Winn	Maryland
Hamet, Sydney Herbert	Maryland
Harrison, Gordon Marshall	Maryland
Jablon, Paul Allan Milton	Maryland
Kantorow, Bennett Ralph	Maryland
Kantorski, Robert Richard	Maryland
Katz, Albert	Maryland
Kempler, Jerold Allan	Maryland
Kern, Louis Reichert, Jr.	Maryland
Konrad, James Gerard	Maryland
Lauer, Stephen LeBrun	Maryland
Levitt, Kelvin Ronald	Maryland
Mackay, Walter Price	Maryland
Mackowiak, Frank John	Maryland
Maggitti, Ronald Francis	Maryland
McKenna, Richard Sterling	Maryland
Plummer, Robert Mitchell	Maryland
Pristoop, Allan Sanford	Maryland
Rosen, Leon	Maryland
Rosenstein, Sol	Maryland
Roth, Edward Barry	Maryland
Samson, Irwin Louis	Maryland
Sandler, Charles Allen	Maryland
Sermuksnis, Milda Irena	Maryland
Serpick, David Yale	Maryland
Smith, Dennis Boyd	Maryland
Sophocleus, Theodore John	Maryland
Sugarman, Henry	Maryland
Wagner, Herbert Charles	Maryland
Wankel, Richard Allan	Maryland
Wolff, Donald Willard	Maryland

HONORS (1961-62)

Gold Medal for General Excellence	Louis Gubinsky
William Simon Memorial Prize (Chemistry)	Louis Gubinsky
Andrew G. DuMez Medal (Pharmacy)	Sydney H. Hamet
L. S. Williams Practical Pharmacy Prize	Herbert C. Wagner
Conrad L. Wich Pharmacognosy Prize	Ernest A. Boatman
Wagner Pharmaceutical Jurisprudence Prize	Lawrence H. Block
David Fink Memorial Prize (Pharmacy)	Allan S. Pristoop
Phi Beta Chapter, Phi Sigma Delta Fraternity Cup (Leadership)	Sydney H. Hamet
Kappa Chapter, Alpha Zeta Omega Prize (Pharmacology)	Sydney H. Hamet
Epsilon Alumnae Chapter, Lambda Kappa Sigma Sorority Prize (Pharmacy Administration)	Herbert C. Wagner
Merck Award (Pharmacy)	James G. Konrad
Bristol Laboratories, Inc. Award (Extra Curricular Activities)	Nancy L. Gibbon
Rexall Drug Company Award (Outstanding Achievement)	Allan S. Pristoop

Certificates of Honor

Herbert C. Wagner

Paul A. M. Jablon

Sydney H. Hamet

Honorable Mention (Junior Class)

Marjorie S. Abramovitz

Yale H. Caplan

Jeanne A. Baker

DEAN'S MEDALS FOR ACADEMIC EXCELLENCE (1961-62)

Class of 1962

Lawrence H. Block
Nancy L. Gibbon
Louis Gubinsky
Sydney H. Hamet

Paul A. M. Jablon
Allan S. Pristoop
Edward B. Roth
Herbert C. Wagner

Honorable Mention

Larry L. Augsburger
Stephen J. Gandel
John E. Grubb

James G. Konrad
Charles A. Sandler
David Y. Serpick

Class of 1963

Marjorie S. Abramovitz
Jeanne A. Baker
David A. Blake
Don L. Bradenbaugh
Yale H. Caplan

Ronald M. Hopkins
Stephen P. Levin
Kenneth C. Ullman
James J. Welsh, Jr.
Stuart Winakur

Honorable Mention

Barbara Foster Patel

Leon D. Shargel

Irwin A. Heyman

Class of 1964
Honorable Mention

Richard L. Wynn

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THE
UNIVERSITY of MARYLAND
BULLETIN



School of Pharmacy

1964-1965

THE UNIVERSITY is the rear guard and the advance agent of society. It lives in the past, the present and the future. It is the storehouse of knowledge; it draws upon this depository to throw light upon the present; it prepares people to live and make a living in the world of today; and it should take the lead in expanding the intellectual horizons and the scientific frontiers, thus helping mankind to go forward—always toward the promise of a better tomorrow.

From "The State and the University"
the inaugural address of
President Wilson H. Elkins,
January 20, 1955,
College Park, Maryland.

CATALOG AND 121st ANNOUNCEMENT

THE SCHOOL OF PHARMACY

(Maryland College of Pharmacy, 1841 to 1904)

1964-1965

THE UNIVERSITY OF MARYLAND

VOLUME 44, NUMBER 1
School of Pharmacy
636 West Lombard Street
Baltimore, Maryland 21201

This catalog includes information applying to the Five Year Program which became mandatory in September, 1960.

1964

1965

JANUARY 1964

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MARCH

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SEPTEMBER

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NOVEMBER

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JUNE

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DECEMBER

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25	26	27	28	29	30	31

ACADEMIC CALENDAR, 1964 - 1965

First Semester—1964

September 14	Monday	Third Year Registration— 9:00 a.m. Fourth Year Registration— 10:00 a.m. Fifth Year Registration— 11:00 a.m. Orientation for all new students —2:00 p.m. Graduate Registration—9:30- 11:30 a.m.
September 15	Tuesday	
September 21	Monday	Instruction begins with first scheduled class
November 25	Wednesday	Thanksgiving recess begins at close of last scheduled period
November 30	Monday	Instruction resumes with first scheduled period
December 22	Tuesday	Christmas recess begins at close of last scheduled period

1965

January 4	Monday	Instruction resumes with first scheduled period
January 21-27	Thursday-Wednesday	First Semester examinations

Second Semester

February 2	Tuesday	Third Year Registration— 9:00 a.m. Fourth Year Registration— 10:00 a.m. Fifth Year Registration— 11:00 a.m. Graduate Registration—9:30- 11:30 a.m.
February 3	Wednesday	
February 8	Monday	Instruction begins with first scheduled class
February 22	Monday	Washington's Birthday, Holiday
April 15	Thursday	Easter recess begins at close of last scheduled period
April 20	Tuesday	Instruction resumes with first scheduled period
May 21-27	Friday-Thursday	Fifth Year final examinations
May 27-June 3	Thursday-Thursday	Second Semester examinations
May 31	Monday	Memorial Day, Holiday
June 5	Saturday	Commencement Exercises

All students are expected to complete their registration, including the payment of bills and filing of class cards, on the regular registration day. Students failing to comply with this regulation are charged a fee of ten dollars; this fee will be increased to \$20.00 beginning with the 1965 Summer Session. No student is normally permitted to register after Friday of the week in which instruction begins.

The offices of the Registrar and Cashier are open daily, Monday through Friday, from 9:00 a.m. to 4:00 p.m.

CORRESPONDENCE

All correspondence prior to entrance in the Pre-professional Program of the Five Year Curriculum should be addressed to the Director of Admissions, University of Maryland, College Park, Maryland 20742.

All correspondence relative to entrance in the Professional Program of the Five Year Curriculum should be addressed to the Director of Admissions, University of Maryland, Building 520R, Room 201, Lombard and Greene Streets, Baltimore, Maryland 21201.

Correspondence relating to the following topics should be addressed to the respective departments in care of the School of Pharmacy, 636 West Lombard Street, Baltimore, Maryland 21201:

Alumni Affairs, Business Matters, Catalogs and Brochures,
General Matters, Gifts and Bequests, Public Relations,
Housing of Students (Baltimore), Scholarships (Baltimore),
Scholastic Standing of Students (Baltimore), Transcripts of
Records (Baltimore), Vocational Placement.

VISITORS

Visitors are welcome at the School of Pharmacy in Baltimore. The Dean's office is open Monday through Friday from 9 a.m. to 5 p.m. and on Saturday by appointment.

The provisions of this publication are not to be regarded as an irrevocable contract between the student and the University of Maryland. The University reserves the right to change any provision or requirement at any time within the student's term of residence. The University further reserves the right at any time, to ask a student to withdraw when it considers such action to be in the best interests of the University.

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B.S., University of Idaho, 1928; M.S., State College of Washington, 1930; Ph.D.,
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A.B., Huron College, 1933; M.A., University of Chicago, 1939; D.S.W., Western
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THE SCHOOL

HISTORY AND PROGRAM

The purposes of the School of Pharmacy are to train students for the efficient, ethical practice of all branches of pharmacy; to instruct students in general scientific and cultural subjects so they can read critically, express themselves clearly, and think logically as members of a profession and citizens of a democracy; to guide students into productive scholarship and research for the increase of knowledge and techniques in the healing arts of pharmacy.

The Maryland College of Pharmacy, the oldest pharmacy school of the South, was organized on July 20, 1840 by a progressive group of Maryland physicians and apothecaries to provide systematic instruction in Pharmacy to replace the out-dated apprenticeship training. The College, incorporated on January 27, 1841, gave its first lectures in November. In 1904, the College joined with a group of medical schools and the Maryland College of Dental Surgery to offer cooperative instruction in the health sciences. The new institution was known as the University of Maryland. In 1920, this group of Baltimore professional schools was merged with the Maryland State College at College Park to form the present University of Maryland.

The School of Pharmacy in Baltimore now occupies buildings constructed specifically for pharmaceutical education. The laboratories and classrooms are equipped with the most modern apparatus and every aid to instruction and for research in pharmaceutical sciences is available.

The library facilities are excellent. The pharmacy collection containing over 30,000 books is housed in the new Health Sciences Library.

Students have access to the time-honored collections of the Enoch Pratt, the Peabody, the Medical and Chirurgical Faculty, and The Johns Hopkins University. The libraries are within convenient distance of the School. Students also have access to the art collections at the Walters Art Gallery, and the Baltimore Museum of Art.

Like all professions devoted to education in the health sciences, pharmacy has expanded its period of training. The American Association of Colleges of Pharmacy requires a Five Year Program and students entering the study of pharmacy on or after the Autumn of 1960 are required to enroll in a Five Year Pharmacy Program.

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education. The School holds membership in the American Association of Colleges of Pharmacy.

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DEGREES

The School of Pharmacy offers courses leading to the following degrees: Bachelor of Science in Pharmacy, Master of Science, Doctor of Philosophy. The general procedures to be followed by undergraduate students are set forth below.

Candidates for advanced degrees must register in the Graduate School of the University. For detailed information, see the catalog of the Graduate School.

PROGRAM

As a result of a decision by the American Council on Pharmaceutical Education, students beginning a pharmacy or pre-professional curriculum on or after April 1, 1960 are required to enroll in the academic program of not less than five years.

At the University of Maryland the five year program consists of two years of a pre-professional and a three-year pharmacy program. The first year of the professional program was offered in Baltimore in September 1961.

SCHOOL OF PHARMACY, COLLEGE PARK CAMPUS

The pre-professional program is not available in Baltimore but may be obtained at the College Park Campus of the University or any other accredited university or college where appropriate courses are offered.*

SCHOOL OF PHARMACY, BALTIMORE CAMPUS

Only the three year professional program is offered in Baltimore.

REQUIREMENTS FOR ADMISSION TO THE FIVE YEAR PROGRAM

ADMISSION TO PRE-PROFESSIONAL PROGRAM AT COLLEGE PARK

Interested secondary school students are invited to write to the Dean of

* Not less than 24 semester hours of academic work immediately prior to admission to the Professional Program at Baltimore must be completed in a regionally accredited college or university.

the School of Pharmacy in Baltimore for a catalog concerning the School and for literature about the opportunities in the pharmacy profession.

A graduate of an accredited secondary school in Maryland whose secondary record indicates probable success in the University will be admitted provided that:

1. his scholastic average in major subjects in his last two years in high school has been satisfactory;
2. his program has included the following:

<i>Subjects</i>	<i>Recommended</i>	<i>Required</i>
English	4 Units	4 Units
College Preparatory Mathematics—including algebra (1), plane geometry (1) and additional units in advanced algebra, solid geometry, trigonometry, or advanced mathematics	4	2
Physical Sciences (Chemistry and Physics)	2	1
History and Social Sciences	2	1
Biological Sciences	1	0
Foreign Language—German or French	2	0
Unspecified academic subjects	1	8
Total	16	16

3. he has had the test results of the American College Testing Program submitted to the University Admissions Office;
4. he has a satisfactory general recommendation from his secondary school as to his character and ability.

All applicants for admission, who do not qualify as Maryland residents (see definition of Residence and Non-Residence, page 12) must also have the results of the American College Testing Program and complete high school records submitted to the Admissions Office. Only a limited number of well qualified out-of-state applicants can be considered for admission since first preference in admission is given to Maryland residents.

A complete statement of admission requirements and policies will be found in the publication entitled "An Adventure in Learning." A copy of this publication may be obtained by writing to the Catalog Mailing Office, North Administration Building, University of Maryland, College Park, Maryland 20742.

Application forms may be obtained only from the Director of Admissions of the University of Maryland at College Park. Applications must be made to the Director of Admissions at College Park, Maryland 20742.

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A fee of \$10.00 must accompany a prospective student's application for admission. If a student enrolls for the term for which he applied, the fee is accepted in lieu of the matriculation fee.

Beginning with applications for admission to the University for the Fall Semester 1965, a Late Application Fee of \$25.00, instead of the normal \$10.00 fee, will be assessed against those students who apply for admission after the cut-off date of July 15, 1965.

† Annual costs of attending the University at College Park for Maryland residents include: fixed charges, \$250.00; instructional materials, \$24.00; special fees, \$72.00; board, \$420.00 and lodging, \$290.00 to \$320.00. Non-resident students are assessed an additional fee of \$400.00 and lodging costs are \$340.00 to \$370.00.

† Effective September 1, 1965: Annual costs of attending the University at College Park for Maryland residents include: fixed charges, \$250.00; instructional materials, \$24.00; special fees, \$72.00; board, \$420.00 and lodging, \$320.00. Non-resident students are assessed an additional fee of \$400.00 and lodging costs are \$420.00.

PROGRAM AT COLLEGE PARK DIVISION

FIRST YEAR	Semester	
	I	II
Chemistry 1, 3—General Chemistry	4	4
English 1—Composition	3	—
Math. 10, 11—Introduction to Mathematics	3	3
or		
Math. 18, 19—Introductory and Elementary Analysis	3	4
Zoology 1—General Zoology	4	—
Botany 1—General Botany	—	4
Elective (Social Science)*	—	3
Health 5	2	—
Physical Education	1	1
Air Science 11, 12 (Men only)	1	2
Total	17 (Women) 18 (Men)	15-16 (Women) 17-18 (Men)

† The University reserves the right to make such changes in fees and other charges as may be found necessary, although every effort will be made to keep the cost to the student as low as possible.

*SOCIAL SCIENCE ELECTIVES

- G. and P. 1, American Government
- Psychology 1, Introduction to Psychology
- Sociology 1, Introduction to Sociology
- Sociology 5, Anthropology

SECOND YEAR

English 3, 4—Composition and World Literature	3	3
History 5, 6—History of American Civilization	3	3
Physics 10, 11—Fundamentals of Physics	4	4
Chemistry 19—Elements of Quantitative Analysis	4	—
Economics 37—Fundamentals of Economics	—	3
Elective (Fine Arts or Philosophy)**	3	—
Elective***	—	3
Total	17	16

GENERAL EDUCATION PROGRAM

The University of Maryland has instituted a new series of related course requirements which together constitute a general education program.

Essentially this program includes nine semester-hour-credits of English (three credits of composition, six of literature); six credits in history of which three must be in American History; six credits chosen from various fields of the social sciences; seven credits in science; three credits in mathematics; three credits in fine arts or in philosophy.

Two semesters of physical education and a course in health education are required of all undergraduates.

Students in the School of Pharmacy satisfy the mathematics, the science and three credits of the social science requirements by pursuing the courses identified in the curriculum.

Greater detail will be found in the brochure: *General and Academic Regulations*.

**FINE ARTS OR PHILOSOPHY ELECTIVE

- Art 9, History of Art
- Art 22, History of American Art
- Speech 16, Introduction to the Theatre
- Music 20, Survey of Music Literature
- Philosophy 1, Introduction to Philosophy
- Philosophy 45, Ethics

***Elective can be chosen from groups previously described. A fourth semester of college English or a 3 hour course in Public Speaking is also acceptable.

Admission to the Professional Program at Baltimore

1. From College Park Division †

Students who have completed the prescribed pre-professional program at College Park with a scholastic average of not less than C (2.0) and who are in good standing will qualify for advancement to the pharmacy program at Baltimore.

In the semester preceding enrollment in the Baltimore division of the School of Pharmacy each student will be required to complete a form of intent and return it to the Dean of the School of Pharmacy at Baltimore.

2. From Other Universities and Colleges †

A. Prerequisites

Applicants for admission must present evidence of having completed successfully two academic years of work in an accredited college* of arts and sciences based upon the completion of a four year high school course or the equivalent in entrance examinations. The college course must consist of a minimum of 60 semester hours of credit exclusive of physical education, health, military science or similar courses. The 60 semester hours must include 9 hours of English, 6 hours of college level mathematics (modern mathematics or algebra, trigonometry and analytical geometry), 4 hours of botany and 4 hours of zoology (or 8 hours of general biology), 8 hours of general inorganic chemistry (including qualitative analysis), 4 hours of quantitative chemistry, 8 hours of physics, 3 hours of economics, 6 hours of history, 3 hours of social sciences, 3 hours of fine arts or philosophy and the remainder as electives from the non-science areas.

All applicants for admission to the School of Pharmacy at Baltimore must have attained a prior scholastic average of not less than C (2.0) when the lowest passing grade is D (1.0) or its equivalent, and must be in good standing. This average of not less than C (2.0) shall be based on all college courses previously undertaken by the applicant exclusive of credit in military science, physical education, health, hygiene or similar courses.

Students must satisfy as well, any additional qualifications governing recommendations for transfer specified by the institution from which the

*Not less than 24 semester hours of academic work immediately prior to admission to the Professional Program at Baltimore must be completed in a regionally accredited college or university.

†Students who enrolled in a pre-professional pharmacy program before the summer session of 1964 will be asked to meet the general education requirements set forth as "The Program in American Civilization" described in the School of Pharmacy catalog (pages 4-5, 1963-64 edition)

student is seeking transfer. *Transfer credit is given only for the courses completed with a grade of C (2.0) or higher and which are a part of the pre-professional curriculum of the School of Pharmacy.*

B. Application Procedures

Candidates seeking admission to the School of Pharmacy in Baltimore should write to the Director of Admissions and Registration, University of Maryland, Building, 520R, Room 201, Lombard and Greene Streets, Baltimore, Maryland 21201. Applicants wishing advice on any problem relating to their applications should communicate with the above office.

ENROLLMENT IN THE PRE-PROFESSIONAL PROGRAM AT COLLEGE PARK

Students applying for the first two years of the Pharmacy curriculum at College Park may obtain application blanks by writing to the Admissions Office at College Park. Students meeting the requirements for admission will receive letters of admission from the Admissions Office at College Park. Admitted students will receive detailed directions for registering from the Office of the Registrar at College Park a few weeks prior to the September registration period.

There is a fee of \$5.00 for changes in registration made after the first week of instruction.

ENROLLMENT IN THE PROFESSIONAL PROGRAM AT BALTIMORE

1. FROM COLLEGE PARK DIVISION

Students who had filed with the Dean of the School Pharmacy at Baltimore a letter of intent to continue with the professional program of the curriculum and who have completed the requirements of the pre-professional program will be notified by the Dean of the School of Pharmacy that they have qualified for advancement into the professional program.

These students will receive detailed directions for registering from the Baltimore Office of the Registrar a few weeks prior to the September registration period.

2. FROM OTHER UNIVERSITIES AND COLLEGES

Students meeting the requirements for admission will receive certificates of admission issued by the Director of Admissions and Registrations at Baltimore. Admitted students will receive detailed directions for registering from the Office of the Registrar at Baltimore a few weeks prior to the September registration period.

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TUITION AND FEES (BALTIMORE CAMPUS)

FULL-TIME UNDERGRADUATE STUDENTS

<i>Tuition Fee (per semester)</i>	
Residents of Maryland	\$135.00
Non-Residents	160.00
<i>Laboratory Fee (per semester)</i>	15.00
(This one fee covers all laboratory courses)	
<i>*Student Union Fee (per annum)</i>	30.00
<i>*Special Fee (per annum)</i>	10.00
<i>*Student Union Fee (Summer Session)</i>	6.00
<i>Student Activities Fee (per semester)</i>	10.00
(This fee covers subscription to the yearbook, <i>Terra Mariae</i> , all expenses of School luncheons, picnics, dances.)	

The tuition, laboratory and student activities fees for each semester are payable at the time of registration therefor. The Student Union fee and the Special fee are payable in full at the time of first registration. Students wishing to make arrangements for deferred payment of tuition charges must do so with the Financial Office at or prior to registration for the semester for which such charges are imposed.

Incidental Charges

For New Students Only (Not applicable to students accepted from School of Pharmacy, College Park)

Application fee (non-returnable)	7.50
Matriculation fee (non-returnable)	10.00
Deposit upon acceptance for admission	50.00
(This fee will be credited against the first semester's tuition.)	

For Candidates for B.S. in Pharmacy Degree

Graduation Fee (to be paid in February of the Fifth Year) 15.00

*The Student Union fee is payable by all students enrolled in the Professional Schools on the Baltimore Campus and is used to pay interest on and amortize the cost of construction of the Union Building. The Special fee is payable by all full-time students enrolled in the Professional Schools on the Baltimore campus and is used to finance the equipment needed for the Union Building. For students enrolling for the first time at the beginning of the second semester, the Student Union Fee will be \$15.00; the Special Fee will be \$5.00. All students carrying as much as 12 credit hours of work are considered full-time students subject to this fee. All summer school students will pay a \$6.00 Student Union Fee. This Student Union Fee is in addition to the tuition, laboratory fees, and book charges, etc.

Delinquencies and Breakage

Late Registration Fee (Beginning with the Summer Session 1965, this fee will be increased to \$20.00.)	10.00
Special Examination Fee	5.00
Breakage—Students are required to pay for all breakage in excess of \$5.00 per year.	

Other Expenses

Books and supplies, approximately	75-150.00
Students registering for more than a regularly scheduled semester's work will be charged additionally for each course.	
Fee for Changes in Registration after first week	5.00

PART-TIME UNDERGRADUATE STUDENTS

All students registered for twelve semester hours or more are considered full-time students. Part-time students are charged as follows:

<i>Tuition Fee (for each semester hour per semester)</i>	\$15.00
<i>Laboratory Fees (per semester)</i>	
Anatomy and Histology	10.00
Chemistry	12.00
Microbiology	15.00
Pharmacognosy	5.00
Pharmacology	10.00
Pharmacy	10.00
Physiology	10.00
<i>*Student Union Fee (per annum)</i>	6.00
<i>*Student Union Fee (Summer Session)</i>	6.00
<i>Student Activities Fee (per semester)</i>	10.00

*The Student Union fee is payable by all students enrolled in the Professional Schools on the Baltimore Campus and is used to pay interest on and amortize the cost of construction of the Union Building. The Special fee is payable by all full-time students enrolled in the Professional Schools on the Baltimore campus and is used to finance the equipment needed for the Union Building. For students enrolling for the first time at the beginning of the second semester, the Student Union Fee will be \$15.00; the Special Fee will be \$5.00. All students carrying as much as 12 credit hours of work are considered full-time students subject to this fee. All summer school students will pay a \$6.00 Student Union Fee. This Student Union Fee is in addition to the tuition, laboratory fees, and book charges, etc.

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GRADUATE STUDENTS

Matriculation fee (for new students only, non-returnable)	\$10.00
†Tuition fee (per semester hour each semester)	18.00
Laboratory fee—Same as undergraduate schedule above	
* <i>Student Union Fee (per annum for full time students)</i>	30.00
* <i>Special Fee (per annum for full time students only)</i>	10.00
* <i>Student Union Fee (Summer Session, all students)</i>	6.00
* <i>Student Union Fee (per annum, part time students)</i>	6.00

Graduation Fee

Master's Degree	\$10.00
Doctor's Degree (including hood and microfilming of thesis)	50.00

Effective beginning the Summer Session of 1965, an additional \$10.00 as a penalty fee will be assessed against those students who fail to apply for graduation within the first eight weeks of a regular academic semester or for the first three weeks of a summer session.

Students who apply after the end of the twelfth week of a regular academic semester and those who apply after the end of the fourth week of a summer session will be required to wait for the next academic semester in order to obtain a diploma.

WITHDRAWALS FROM SCHOOL OF PHARMACY AT BALTIMORE

If a student desires or is compelled to withdraw from the School he must file a written request for withdrawal with the Dean.

A student who does not comply with the above regulation is not issued an honorable dismissal and is not accorded any refund to which he might otherwise be entitled.

Minors may withdraw only with the written consent of parent or guardian.

*The Student Union fee is payable by all students enrolled in the Professional Schools on the Baltimore Campus and is used to pay interest on and amortize the cost of construction of the Union Building. The Special fee is payable by all full-time students enrolled in the Professional Schools on the Baltimore campus and is used to finance the equipment needed for the Union Building. For students enrolling for the first time at the beginning of the second semester, the Student Union Fee will be \$15.00; the Special Fee will be \$5.00. All students carrying as much as 12 credit hours of work are considered full-time students subject to this fee. All summer school students will pay a \$6.00 Student Union Fee. This Student Union Fee is in addition to the tuition, laboratory fees, and book charges, etc.

†The \$18.00 rate applies to all students enrolled in the Graduate School without regard to the location at which the course is given and will apply to audited courses as well as courses taken for credit.

1. REFUND OF FEES UPON WITHDRAWAL.

Fees, excluding Application Fee, Matriculation Fee, Student Activities Fee, the \$50.00 deposit on tuition and any scholarship credit, are refunded to withdrawing students in accordance with the following schedule:

Period from date instruction begins:

Two weeks or less	80%
Between two and three weeks	60%
Between three and four weeks	40%
Between four and five weeks	20%
Over five weeks	No return

The date used in computing refunds is the date the application for withdrawal is filed in the Office of the Dean.

2. GRADES

The record of students who withdraw is computed as follows:

Before eight weeks of the semester have passed	WX
After eight weeks of the semester have passed, if work has been of passing grade	WP
After eight weeks of the semester have passed, if work has been of failing grade	WF

Any student who (1) fails to withdraw from any course or from the school in the required manner or (2) who registers, does not attend classes and does not withdraw, will receive grades of F in all courses for which he has registered.

TEXT BOOKS

Each student is required to have his own text books. The books required in each course will be announced at the beginning of each semester.

TUITION AND FEES FOR PRE-PROFESSIONAL PROGRAM (COLLEGE PARK CAMPUS)

See page 4 for summary statements and consult "Adventure in Learning" which is available from College Park, Maryland.

CHANGES IN CURRICULUM

The Faculty Assembly reserves the right to make, at any time, such changes in the curriculum as may be found necessary or desirable.

DEFINITION OF RESIDENCE AND NON-RESIDENCE

Students who are minors are considered to be resident if at the time of their registration their parents have been domiciled in the State of Maryland for at least six months.

The status of the residence of a student is determined at the time of his first registration in the University, and may not thereafter be changed by him unless, in the case of a minor, his parents move to and become legal residents of Maryland by maintaining such residence for at least six months. However, the right of the minor student to change from a non-resident status to resident status must be established by him prior to the registration period set for any semester.

Adult students are considered to be residents if at the time of their registration they have been domiciled in Maryland for at least six months provided such residence has not been acquired while attending any school or college in Maryland or elsewhere. *Time spent on active duty in the armed services while stationed in Maryland will not be considered as satisfying the six-months period referred to above except in those cases in which the adult was domiciled in Maryland for at least six months prior to his entrance into the armed service and was not enrolled in any school during that period.*

The word "domicile" as used in this regulation shall mean the permanent place of abode. For the purpose of this rule only one domicile may be maintained.

ACADEMIC REGULATIONS (COLLEGE PARK CAMPUS)

Each entering student is subject to the rules and policies published in the official "University General and Academic Regulations."

ACADEMIC REGULATIONS (BALTIMORE CAMPUS)

ATTENDANCE REQUIREMENTS

Students who have not attended eighty-five percent of scheduled classes and laboratory periods for any subject are not admitted to the final examination in that subject. Absences due to illness and late registration are normally counted with the fifteen percent allowable absence. Lateness of more than half a period is construed as absence; two latenesses of less than half a period are also construed as an absence.

EXAMINATIONS

Written and oral quizzes are given throughout the semester at the discretion of the instructor. Final examinations are held at the end of each semester as scheduled on the calendar printed in this catalog.

Students unable to appear for final examinations must report to the Dean immediately. When the absence is justifiable, the Dean will grant permission for a deferred examination.

GRADING SYSTEM

The School uses the standard University of Maryland grading system:

<i>Grade</i>	<i>Interpretation</i>	<i>Point Value</i>
A	Excellent	4
B	Good	3
C	Fair	2
D	Poor but passing	1
F	Failure	0
I	Course work incomplete	replaced by definite grade when course requirements have been met

Standing in scholarship is based upon the grade-point average for the semester's work. This average is found by multiplying the grade received by the number of credit hours the course carries, e.g.:

<i>Subject</i>	<i>Credit</i>	<i>Grade</i>	<i>Points</i>
Chemistry	4	C	8
Microbiology	4	C	8
Pharmacognosy	4	B	12
Pharmacy	4	A	16
Pharmacy Administration	3	D	3
	19		47

Dividing the number of points by the number of credits, the student is found to have a grade point average of 2.47.

When, for any reason, a course is repeated, the final mark is used.

In computing scholastic averages only those courses taken in residence at the University of Maryland are considered.

MID-SEMESTER FAILURE WARNINGS

Each student is assigned to a Class Advisor who counsels him on his academic standing. Seven weeks after the beginning of each semester,

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the Dean warns and the Advisor interviews all students earning grades of D and F.

INCOMPLETE WORK

The mark of I (Incomplete) is exceptional. It is to be given only to a student whose work in a course has been qualitatively satisfactory, when, because of illness or other circumstances beyond his control, he has been unable to complete the requirement. Whenever the mark I is used the instructor enters on the class card a reason of the character stated above with an estimate of the quality of the student's work. In cases when this mark is given the student must complete the work assigned by the instructor by the end of the next semester in which that subject is again offered or the mark I becomes F.

RAISING GRADE OF D

Work of mark D, or of any passing mark, cannot be raised to a higher mark except by repeating the course. A student who repeats a course in which he failed or for which he has received credit for work done at the University, or elsewhere, must meet all the requirements of the course, including regular attendance, laboratory work, and examinations, but he will not receive any additional credit for the course completed with a passing grade.

If the work is completed at the University of Maryland his final mark will be substituted for the mark already recorded. Although the final mark received in the course will be used in determining credit for promotion and graduation, it does not apply to honors and awards. See applicable section under "Honors and Awards."

If the student is authorized by the Dean to repeat the course or its equivalent, at another university or college, the regulations applicable to transfer of credit apply. Credit is given if the course is completed with a grade of C (2.0) or higher; for purposes of computing grade averages, transfer credit is considered as the equivalent of a grade of C (2.0).

REMOVAL OF AN F GRADE

A student receiving an F grade in any course and if not successful in raising his grade after repeating the course once, will be required to withdraw from the School of Pharmacy. In unusual cases, a student may be permitted, with the written permission of the Dean and the head of the department giving the course, to repeat the course for the second time. Such permission can be given to the student for only one course.

An appropriately supported petition for any exception to the above regulation must be submitted to the Faculty Council. Such exception will be granted under unusual and extraordinary circumstances and shall require the approval of the head of the department giving the course.

The above rules on removal of an F grade apply also to the student who is permitted to take the course at another institution to meet requirements for the degree from the School of Pharmacy of the University of Maryland.

REGULATIONS FOR PROMOTION AND PROBATION

All students are expected to maintain a grade average of not less than C (2.0) for each semester. Any student who fails to maintain a grade average of C (2.0) for any semester will be placed on probation during the next semester. Students in the Fifth Year Class must maintain a grade average of C (2.0) to become eligible for graduation.

Students who fail more than one-fifth and less than one-half, in semester hour credit, of their scheduled work for any semester will be placed on probation during the next semester.

Any student on probation must pass all courses for which he is registered and must maintain a grade average of C (2.0) or he will be automatically dropped from the School of Pharmacy at the end of that semester.

A student who fails in one-half or more of his scheduled academic credits in any semester shall be dismissed at the end of that semester for unsatisfactory scholarship.

Any student who has been on probation for two semesters and then obtains a probation grade point average for a third semester shall be automatically dropped at the end of that semester.

Any student who is dismissed from the School of Pharmacy is required to report to the Dean's Office for dismissal procedures.

REGULATIONS FOR READMISSION OF STUDENTS DROPPED FOR POOR ACADEMIC STANDING

A student who has been dropped for poor academic standing may apply in writing to the Dean for readmission after a lapse of at least one semester.

Any student who is readmitted shall be placed on probation for that semester.

Any student who has been dropped for poor academic standing may be readmitted only once.

REGULATIONS FOR REVIEW

In the application of the foregoing rules and regulations, the Faculty Assembly of the School of Pharmacy shall act as the final Board of Review. Any student may apply in writing to the Faculty Assembly for a reconsideration of his particular case.

*ELECTIVE PROGRAMS AT BALTIMORE

1. FOURTH YEAR ELECTIVES

Students shall elect either the General Pharmacy Major or the Pre-Graduate Major by May 1 of the Third Year.

Students to be eligible for the Pre-Graduate Major must have established the aptitudes for the successful pursuit of graduate work and must meet the necessary prerequisites. Those eligible for the Pre-Graduate Major may postpone the selection of this elective until the following year and thus will pursue the General Pharmacy Major during the Fourth Year.

Students not qualifying for the Pre-Graduate Major will be required to pursue the General Pharmacy Major.

2. FIFTH YEAR ELECTIVES

Students must make elective selections by May 1 of the Fourth Year.

The General Pharmacy Major of the Fourth Year Class may (a) continue with the General Pharmacy Major and choose between Pharmacognosy 52, Animal Health Products and Pharmacy 156, Cosmetics and Dermatological Preparations or (b), elect the prescribed Hospital Major program or (c) if approved as eligible, transfer to the Pre-Graduate Program and will enroll in Mathematics 20, 21, Calculus and Pharmacy 161, 162, Special Problems.

The Pre-Graduate Major of the Fourth Year Class may (a) continue with the Pre-Graduate Major, will enroll in Chemistry 187, 189, Physical Chemistry (Lectures) and choose between Chemistry 188, 190, Physical Chemistry Laboratory and Pharmacy 161, 162, Special Problems or (b) transfer to the Hospital Major and follow the prescribed program.

CLASSIFICATION OF STUDENTS—PROFESSIONAL PROGRAM

Students who have completed 31-70 credit hours of the Professional Program with a grade average of C (2.0) in addition to the Pre-Professional requirements will be classified as students of the Fourth Year Class.

General Pharmacy Majors of the Fourth Year Class who have completed 71 credit hours of the Professional Program with a grade average of C (2.0) will be classified as Fifth Year Students. Pre-Graduate Majors of the Fourth Year Class in order to advance in the Pre-Graduate Program and attain the classification of the Fifth Year Class must have completed 73 credit hours of the Professional Program with an academic quality indicative of the successful pursuit of graduate work.

*The elective program must be approved by the Class Adviser and the Dean. For additional information consult with the Class Adviser and see the respective curricula on pages 34 and 35.

Students of the Fifth Year Class to be considered as candidates for graduation must have maintained a grade average of at least C (2.0) and have completed minimum credit hours of the Professional Program according to the following:

- | | |
|---|------------------|
| (a) General Pharmacy Majors | 108 credit hours |
| (b) Hospital Majors who have transferred from the General Pharmacy Major | 108 credit hours |
| (c) Hospital Majors who have transferred from the Pre-Graduate Major | 110 credit hours |
| (d) Pre-Graduate Majors who have followed this elective area for one or two years | 110 credit hours |

REQUIREMENTS FOR GRADUATION

The degree of Bachelor of Science in Pharmacy will be conferred upon students who have spent at least the Fifth Year in residence at the School of Pharmacy at Baltimore and have been accredited with instruction in the Professional Program as follows:

- | | |
|--|--------------------|
| (a) General Pharmacy Majors | 108 semester hours |
| (b) Hospital Majors who have transferred from the General Pharmacy Major | 108 semester hours |
| (c) Hospital Majors who have transferred from the Pre-Graduate Major | 110 semester hours |
| (d) Pre-Graduate Majors who have pursued this elective area for one or two years | 110 semester hours |

In addition, all students must have attained the required grade point standings and must have met other requirements.

TRANSCRIPTS OF RECORDS

Students or alumni desiring transcripts of scholastic records may obtain them from the Registrar. The University rules regarding the issuance of transcripts are as follows: one copy of a student's records is made without charge; for additional copies, there is a fee of one dollar for each transcript.

Transcript records are of two kinds:

- Informal transcripts which may be obtained by the student or alumnus for such personal use as he may wish; and
- Official transcripts, bearing the University seal, which are forwarded, on request, to educational institutions, Government agencies, etc., as attested evidence of the student's record at the School of Pharmacy and the honorable dismissal therefrom.

No transcript of a student's record will be furnished in the case of any student or alumnus whose financial obligations to the School of Pharmacy have not been satisfied.

REGISTRATION WITH THE MARYLAND BOARD OF PHARMACY

The Maryland Pharmacy Law, as amended in 1931, requires all students entering upon the study of Pharmacy in the State to file application with the Maryland Board of Pharmacy. The law reads as follows:

"Any person enrolling as a student in pharmacy in any school or college of pharmacy in this State shall not later than thirty days after enrolling, file with the Secretary of the Maryland Board of Pharmacy, an application for registration as a student of pharmacy in which said application he shall be required to furnish such information as the Board may deem appropriate, and simultaneously with the filing of said application, shall pay the Board a fee of one dollar; all such students of pharmacy shall, at the beginning of any subsequent school or college year, submit to the said Board a sworn statement of any and all actual drug store experience acquired during the preceding vacation months."

LICENSURE REQUIREMENTS OF THE MARYLAND BOARD OF PHARMACY

The Maryland Board of Pharmacy will grant a certificate of registration to those persons deemed competent, after examination, by said Board of Pharmacy. Any person of good moral character who has attained the age of twenty-one years, is a graduate of an accredited school or college of pharmacy, and has completed one year as a registered apprentice in a drug store or pharmacy approved by said Board of Pharmacy for such purposes may sit for examination given for the purpose of registration.

A student may not obtain credit or practical experience in a drug store or pharmacy acquired prior to attendance as a regular student in a school or college of pharmacy or while in attendance at said school or college of pharmacy. Four months of the required practical pharmacy experience as a registered apprentice must be acquired subsequent to graduation from an accredited school or college of pharmacy, in a drug store or pharmacy approved by the Board for such purposes.

Prospective students are advised to contact the Secretary of the Maryland Board of Pharmacy, 301 West Preston Street, Baltimore, Maryland 21201, for further information relative to the requirements for eligibility for licensure.

DEPARTMENT

The University reserves the right to request at any time the withdrawal of a student who cannot or does not maintain the required standard of

scholarship, or whose continuance in the University would be detrimental to his or her health, or the health of others, or whose conduct is not satisfactory to the authorities of the University.

Students of the last classification may be asked to withdraw even though no specific charge be made against them.

EMPLOYMENT

A student should be prepared to finance his education during the entire period of attendance, as all of his time should be spent in the preparation and completion of the scheduled work. Baltimore offers a number of opportunities to secure suitable employment, but it is recommended that students refrain from working during the school session.

HOUSING

1. WOMEN

A limited number of women may obtain housing accommodations in the Louisa Parsons Hall, 622 West Lombard Street, which is in close proximity to the School of Pharmacy. It offers comfortable living accommodations and it is under the general supervision of the Dean of Women. Students are requested to bring their own bedspreads, blankets, pillows, bureau scarves, small rugs and a laundry bag. Students may obtain towels and bed linens through a designated commercial rental service. Although students may provide their own bed linens and towels they are not permitted to launder these items in Louisa Parsons Hall. The individual student assumes responsibility for all the dormitory property assigned to her. Any damage done to property other than that which results from ordinary wear and tear will be charged to the student concerned.

The room rates are as follows: Double Room per person, \$120.00 per semester; Single Room \$160.00 per semester; Single Room with Bath \$190.00 per semester. The room charge will appear on the student's bill payable at the time of registration.

Effective September 1, 1965 the room rate per person, per semester will be \$160.00.

Meals may be purchased at the Baltimore Union Cafeteria or in nearby restaurants.

2. MEN

Housing accommodations are available for men in The Baltimore Union. For particulars, see section immediately below.

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GENERAL INFORMATION FOR THE BALTIMORE UNION

The Baltimore Union for students of the Professional Schools is located adjacent to the Professional Schools at 621 West Lombard Street. Accommodations for 195 men are provided in a five-story semi-air conditioned building which also contains a cafeteria, fountain lounge, meeting rooms, laundry facilities, game room, bookstore, barber shop and lounges on each floor. Double rooms are available. The rental agreement is made for rooms only; meals are served cafeteria style on a cash basis. The contract for accommodations covers the 1964-1965 academic year.

ACADEMIC YEAR

Double Room Rates:

\$150.00 per semester (per person)

\$ 80.00 per eight weeks summer session (per person)

What the Rate covers:

The rate shown above is per person and includes the following:

Room furnishings, bed and cover, mattress, chest of drawers, closet, book shelves, desk, medicine cabinet, desk chair and desk lamp. Maid service will include cleaning of room twice per week and replacement of change of linen once each week.

Telephone service is available through the Chesapeake & Potomac Telephone Company. Cost of the telephone is not included in the room rate. Information can be obtained from the Manager's office. Mail service is also provided.

The resident provides blankets, pillow, towels and linens of which the latter two must be rented through the designated commercial rental service.

A small amount of luggage space is available. Storage of anything other than luggage will *not* be available.

TRANSIENTS

The Rates are:

\$ 4.00 per day

\$24.00 per week

What the Rate covers:

The services will include one bath towel, one face towel, one face cloth, soap and change of linen daily (once per week if weekly guest).

HOW TO APPLY FOR A ROOM ASSIGNMENT

Write:

Manager's Office
The Baltimore Union
621 West Lombard Street
Baltimore, Maryland 21201

PARKING

The expansion program for the Baltimore Campus places a premium on space for parking on University lots.

Student use of parking facilities on a temporary basis in certain designated University areas is contingent upon the availability of space. Admission of students to University parking lots will be by authorized identification cards only. These cards bearing an expiration date are issued by the Office of the Dean.

Parking rates are forty-five cents per day, payable daily.

THE HEALTH SCIENCES LIBRARY

The library facilities are excellent. The new Health Sciences Library which serves the School of Pharmacy, as well as the Schools of Dentistry, Medicine, Nursing, and Social Work, contains over 95,000 bound volumes and regularly receives approximately 2,200 scientific periodicals.

The Rules and Regulations by the library are available for distribution to students at all times.

PROFESSORSHIPS, GRADUATE FELLOWSHIPS AND GRANTS

The Emerson Professorship of Pharmacology

Captain Isaac E. Emerson, of Baltimore, gave to the School of Pharmacy in 1927, a sum of money to establish a professorship of Pharmacology. The first appointment was made in 1930 when Dr. Marvin R. Thompson was designated Emerson Professor of Pharmacology. The chair was subsequently held by the late Dr. Clifford W. Chapman. Dr. Casimir T. Ichniowski, the present incumbent, was appointed June 15, 1951.

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American Foundation for Pharmaceutical Education Fellowships

The American Foundation for Pharmaceutical Education offers annual fellowships of up to \$1800.00 for single persons or up to \$2400.00 for married individuals who are promising graduate students desirous of doing research in pharmacy, pharmaceutical chemistry, pharmacology, and pharmacognosy; students may also apply for an additional allowance up to \$600.00 for tuition, fees, and supplies. Address applications directly to the American Foundation for Pharmaceutical Education, 777 Fourteenth Street, N.W., Washington 5, D.C., between February 15 and March 15 for consideration for the forthcoming September.

The H.A.B. Dunning Research Fellowship

The late Dr. H. A. B. Dunning, a distinguished alumnus of the School of Pharmacy, former associate professor of chemistry and prominent manufacturing pharmacist of Baltimore had bequeathed a sum of money to endow a research fellowship in pharmaceutical chemistry. This fellowship previously supported annually, since 1930 by contributions from Dr. Dunning, is open to promising graduate students interested in pharmaceutical chemistry.

Centennial Research Fund Fellowships

At the celebration of the hundredth anniversary of the founding of the School of Pharmacy, a sum of money was collected to provide two fellowships for research studies in the following fields: pharmacy, pharmaceutical chemistry, pharmacology, microbiology, and pharmacognosy. The selection of candidates for these fellowships will be made by the Faculty Assembly with the approval of the Dean.

The Edwin D. Stalfort and Arthur J. Stalfort Memorial Grant

In memory of Edwin D. Stalfort and Arthur J. Stalfort, the John C. Stalfort & Sons Company, Inc., of Baltimore, Maryland, has provided a grant of \$4000.00 per annum to the Department of Pharmacy to support pharmaceutical research. A portion of this grant is to be utilized to provide a graduate fellowship.

OTHER RESEARCH GRANTS

The Department of Pharmaceutical Chemistry has substantial grants from the National Institutes of Health. The Department of Anatomy and Physiology has been awarded grants as follows: one from the National Science Foundation, one from the National Institutes of Health, and one from the National Aeronautics and Space Administration. Through these grants, the School of Pharmacy is able to provide a number of research fellowships available to graduate and post-doctoral students in pharmaceutical chemistry and physiology.

SPECIAL GRANTS

Grant funds allotted by the Atomic Energy Commission to the Department of Anatomy and Physiology contributed substantially to the equipping of a radioisotope laboratory for the School of Pharmacy at Baltimore for training and research purposes.

The American Viscose Corporation has provided funds to the Department of Pharmacy for the procurement of specialized research equipment.

ASSISTANTSHIPS

Graduate Assistantships

Graduate assistantships, covering tuition and laboratory fees and carrying a stipend of \$2200.00 for a ten-month academic year, are available to qualified students giving fourteen hours of laboratory and teaching services to the departments in which they serve. Such assistants can usually carry two-thirds of the normal graduate work.

Residencies in Hospital Pharmacy

1. University (of Maryland) Hospital

The Department of Pharmacy of the University Hospital together with the School of Pharmacy and the Graduate School of the University of Maryland offer annually, to qualified graduate pharmacists, residencies in hospital pharmacy. The appointments beginning July 1 are for twenty-four months. During the period of appointment the resident divides his time between hospital pharmacy service and graduate study leading to the Master of Science degree granted by the University of Maryland and a certificate of residency to be awarded by the University Hospital. Full time training will be required during the summer of 1965. Two weeks of vacation are allowed during the term of appointment. The University Hospital provides a stipend of \$2800.00 per year for the first year as Assistant Resident. Completion of the Assistant Residency leads to appointment as Resident with a stipend of \$3600.00 per year. Parking space, uniforms and laundering of uniforms are free of charge. The residents must pay the tuition, laboratory and other fees for graduate work in the University.

Complete information on this program may be secured by addressing inquiries to the Director of Pharmaceutical Service, University Hospital, Baltimore, Maryland 21201, or to the Dean of the School of Pharmacy, University of Maryland, Baltimore, Maryland 21201.

2. The Johns Hopkins Hospital Pharmacy

The Pharmacy Department of the Johns Hopkins Hospital, together with the School of Pharmacy and the Graduate School of the University of

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Maryland, offer annually to qualified graduate pharmacists several residencies in hospital pharmacy. The appointments, beginning September 1, are for twenty-two months. During twenty months, appointees divide their time between hospital pharmacy service and graduate study leading to the Master of Science degree granted by the University of Maryland and a certificate of residency awarded by the Johns Hopkins Hospital. Full time training in the Johns Hopkins Hospital Pharmacy is required for two (2) months during the summer of 1965. Four weeks of vacation are allowed during the term of appointment. The Hospital provides a stipend of \$200.00 per month for the first year and \$250.00 per month thereafter and the School of Pharmacy reduces tuition fees for these candidates by 25%. However, candidates must pay the regular laboratory and other fees.

Complete information on this program may be secured by addressing inquiries to the Chief Pharmacist, Johns Hopkins Hospital, Baltimore, Maryland 21205, or the Dean of the School of Pharmacy, University of Maryland, Baltimore, Maryland 21201.

SCHOLARSHIPS AND LOANS (COLLEGE PARK CAMPUS)

All requests for information concerning College Park scholarships and loans should be directed to:

Director, Student Aid
University of Maryland
College Park, Maryland 20742.

*Alumni Association of the School of Pharmacy Scholarships**

The Alumni Association of the School of Pharmacy of the University of Maryland makes available annually scholarships to qualified pre-professional pharmacy students on the basis of worthiness, moral character, scholastic achievement and the need for financial assistance. These scholarships are open only to residents of the State of Maryland. Each scholarship not exceeding \$500.00 per academic year is applied in partial defrayment of fees and expenses at College Park.

*Maryland Pharmaceutical Association Scholarships**

The Maryland Pharmaceutical Association makes available annually scholarships to pre-professional pharmacy students on the basis of worthi-

*These scholarships are awarded by the Committee on Scholarships and Grants-in-Aid of the University of Maryland in cooperation with the Scholarship Committee of the Alumni Association of the School of Pharmacy and the Maryland Pharmaceutical Association.

ness, moral character, scholastic achievement and the need for financial assistance. Each scholarship not exceeding \$500.00 per academic year is used in partial defrayment of fees and expenses at College Park. These scholarships are open only to residents of the State of Maryland.

*Read's Drug Stores Foundation Scholarships**

The Read's Drug Stores Foundation contributes annually several scholarships to pre-professional pharmacy students on the basis of worthiness, scholastic achievement, moral character and the need for financial assistance. Each scholarship not exceeding \$500.00 per academic year is applied to defray partially the fees and expenses at College Park, Maryland. Recipients must have been residents of the State of Maryland for at least one year prior to the awarding of the scholarship.

For information concerning other scholarships and the loans available consult the University bulletin "Adventure in Learning" available from College Park, Maryland.

SCHOLARSHIPS AND LOANS (BALTIMORE CAMPUS)

All requests for information concerning scholarships should be addressed to Dean Noel E. Foss, School of Pharmacy, University of Maryland, 636 W. Lombard Street, Baltimore, Maryland 21201. The selection of the recipients of the scholarships and loans is made by the Dean in conjunction with a committee of the Faculty of the School of Pharmacy.

Alumni Association School of Pharmacy Scholarships

The Alumni Association of the School of Pharmacy of the University of Maryland makes available annually scholarships worth \$100.00 per semester to qualified students who have maintained a superior scholastic average and who are in need of financial assistance to complete their education.

American Foundation for Pharmaceutical Education Scholarships

The American Foundation for Pharmaceutical Education makes available scholarships worth not less than \$100.00 per semester to qualified students of the Third, Fourth and Fifth Years.

*These scholarships are awarded by the Committee on Scholarships and Grants-in-Aid of the University of Maryland in cooperation with the Scholarship Committee of the Alumni Association of the School of Pharmacy and the Maryland Pharmaceutical Association.

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The Charles Caspari, Jr., Memorial Scholarship

In memory of Prof. Charles Caspari, Jr., former Dean of the School of Pharmacy, a number of his friends and alumni have made an endowment for a scholarship worth \$100.00 annually.

The John W. Dargavel Foundation Scholarship Sponsored by the National Association of Retail Druggists

The John W. Dargavel Foundation sponsored by the National Association of Retail Druggists provides annually a scholarship in the amount of \$200.00. The scholarship grant open to a qualified student of the Third, Fourth or Fifth Year Class is awarded on the basis of character, scholarship and financial need.

The Charles Landon Henry Memorial Scholarship

In memory of her husband, Charles Landon Henry, for many years a member of the Maryland Pharmaceutical Association, Mrs. Nora Howard Henry has endowed a scholarship worth \$100.00 to be awarded annually by the Scholarship Committee of the School of Pharmacy, University of Maryland, to a Fifth Year student who has shown superior proficiency in practical and commercial pharmacy.

A. M. Lichtenstein Scholarship

In memory of her husband, A. M. Lichtenstein, distinguished alumnus of the School of Pharmacy, Class of 1889, the late Mrs. Francina Freese Lichtenstein bequeathed a sum of money to endow a scholarship to be awarded annually to a resident of Allegany County, Maryland. The recipient of the award is to be selected on the basis of financial need, character and scholarship.

The William J. Lowry Alumni Memorial Scholarship Fund

In memory of her late husband, Dr. William J. Lowry, prominent alumnus of the Maryland College of Pharmacy, Class of 1896, and in 1926 a prime motivator in the reorganization and reactivation of the Alumni Association of the School of Pharmacy, University of Maryland, Mrs. William J. Lowry has provided the Alumni Association of the School of Pharmacy a sum of money to endow a scholarship to be awarded annually. The recipient of this award is to be selected on the basis of financial need, character and scholarship.

The Noxzema Foundation Scholarships

The Noxzema Foundation, Inc., is contributing a fund to provide two undergraduate scholarships of \$500 each, open to citizens of the United States. Candidates will be selected on the basis of their educational qualifications by the Scholarship Committee of the School of Pharmacy of the University of Maryland to which the Noxzema Foundation, Inc.,

may appoint a non-voting member. This scholarship may be renewed annually at the discretion of the grantors.

The Paulson-Krostar Scholarship Fund

In memory of their parents, David and Deborah Paulson and Jacob and Fannie Krostar, Mr. Aaron Paulson, alumnus of the School of Pharmacy, Class of 1924 and Mrs. Rosalie Krostar Paulson contributed the sum of \$600.00 as a scholarship fund. Awards are based on scholarship and need.

*Prince Georges-Montgomery County
Pharmaceutical Association Scholarship*

The Prince Georges-Montgomery County Pharmaceutical Association provides a scholarship in the amount of \$200.00 to be awarded to a student who has maintained a superior academic record and who is in need of financial assistance.

*The Ladies' Auxiliary, Prince Georges-Montgomery County
Pharmaceutical Association Scholarship*

The Ladies' Auxiliary, Prince Georges-Montgomery County Pharmaceutical Association provides a scholarship in the amount of \$50.00 to a student who has maintained a superior scholastic average and who is in need of financial aid.

Read's Drug Stores Foundation Scholarships

The Read's Drug Stores Foundation of Baltimore, Maryland, contributes funds to provide scholarships paying \$100.00 to \$150.00 per semester to qualified students who have maintained a superior scholastic average and who are in need of financial assistance to complete their schooling.

Rose Hendler Memorial Loan Fund

L. Manuel Hendler and Family have established a loan fund in memory of Mrs. Rose Hendler for needy students. This fund is available to qualified students of the Fourth and Fifth years and loans therefrom are made upon the recommendation of the Dean.

Benjamin Schoenfeld Memorial Pharmacy Loan Fund

The family of Mr. Benjamin Schoenfeld have established a loan fund as a memorial to him. This fund is available to qualified needy students. Loans from the fund are made upon the recommendation of the Dean and the Grants-in-Aid Committee of the School of Pharmacy.

NDEA Student Loans

The National Defense Education Act of 1958 provides funds for student loans. A student may borrow in one year a sum not exceeding \$800 and during his entire course of study may borrow a sum not exceeding \$5000. The borrower must sign a note for the loan and agree to interest and

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repayment terms established by the University. Repayment of the loan begins one year after the borrower ceases to be a full time student and must be completed within ten years thereafter. No interest is charged on the loan until the beginning of the repayment schedule. Interest after that date is to be paid at the rate of 3 per cent per annum.

United Student Aid Funds

Loans up to \$1,000.00 per year are available from many Maryland banks to students who have completed one year or more of study at the University of Maryland, and are making normal progress toward graduation. Maximum interest on such loans is 6 per cent simple, and repayment is due within 36 months after the student ceases to be a full time student.

HONORS AND AWARDS

University Scholarship Honors

Final honors for excellence in scholarship are awarded to not more than one-fifth of the graduating class in each college including the School of Pharmacy. The honor designations are listed in the commencement program and are recorded on the recipients' diplomas.

To be eligible for honors, pharmacy students must complete at least two academic years of resident work at Baltimore applicable for the degree of Bachelor of Science in Pharmacy with an average grade of B (3.0) or higher. Those in the first tenth of the class will graduate with High Honors and those in the second tenth of the class, with Honors.

The Dean's Honor List

The Dean publishes at the end of each semester a list of those students who have maintained an average of "B" or better during the semester. Students whose names appear on the list both semesters receive the School's Academic Medal at the School of Pharmacy Convocations.

In computing the grade point standing for the Dean's Honor Roll, if a student repeats more than one course in any year, both grades earned for these courses will be averaged in determining grade point standing.

Phi Kappa Phi Honorary Fraternity

The University of Maryland Chapter of Phi Kappa Phi, a national fraternity for honor students in all branches of learning, was established at the University in 1920. Qualified students at the School of Pharmacy are eligible by invitation to join this honorary fraternity at the end of the first semester of the Third Year.

Rho Chi Honorary Pharmaceutical Society

Omicron Chapter of Rho Chi, national Honorary pharmaceutical society, was established at the University of Maryland in 1930. Charters for chapters of this organization are granted only to groups in schools or colleges who are members in good standing of the American Association of Colleges of Pharmacy. Eligibility for membership in the Society is based on high attainment in scholarship, character, personality, and leadership.

The School of Pharmacy Gold Medal

A gold medal is awarded annually to the candidate for the degree of Bachelor of Science in Pharmacy who has attained the highest general average, provided that this average is not below the grade of "B." Certificates of Honor are awarded to the three students having the next highest general averages, provided these averages do not fall below the grade of "B."

Honorable mention is made annually of the first three students of the Fourth Year Class having the highest general averages, provided these averages do not fall below the grade of "B."

Only courses taken at the School of Pharmacy at Baltimore are considered in awarding these honors.

The William Simon Memorial Prize

In honor of the late Dr. William Simon, for thirty years a professor of chemistry in the School of Pharmacy, a gold medal is awarded annually by the Faculty Assembly to a candidate for the degree of Bachelor of Science in Pharmacy who has done superior work in the field of practical and analytical chemistry. The recipient must stand high in all subjects. In recommending a student for the prize, the professor of chemistry is guided in his judgment of the student's ability by observation and personal contact as well as by grades.

The Andrew G. DuMez Medal

In memory of Dr. Andrew G. DuMez, late dean and professor of pharmacy at the School of Pharmacy, Mrs. Andrew G. DuMez has provided a gold medal to be awarded annually by the Faculty Assembly to a candidate for the degree of Bachelor of Science in Pharmacy for superior proficiency in pharmacy.

The L. S. Williams Practical Pharmacy Prize

The late L. S. Williams left a trust fund, the income of which is awarded annually by the Faculty Assembly of the School of Pharmacy to the student

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having the highest general average throughout the course in practical and dispensing pharmacy.

The Conrad L. Wich Pharmacognosy Prize

In appreciation of assistance which the Maryland College of Pharmacy extended to him as a young man, Mr. Conrad L. Wich provided a fund, the income from which is awarded annually by the Faculty Assembly of the School to the Fifth Year student who has done exceptional work throughout the course in pharmacognosy.

The Wagner Pharmaceutical Jurisprudence Prize

In memory of her late husband, Mr. Manuel B. Wagner, and her late son, Mr. Howard J. Wagner, both alumni of the School of Pharmacy, Mrs. Sadie S. Wagner, together with her daughter, Mrs. Phyllis Wagner Brill, have provided a fund the income of which is awarded annually by the Faculty Assembly to a Fifth Year student for meritorious academic achievement in pharmaceutical jurisprudence.

David Fink Memorial Prize

In memory of David Fink, '24, Mr. Samuel I. Raichlen gives a new United States Dispensatory as a prize to the Fifth Year student recommended by the Faculty Assembly for proficiency in the general practice of pharmacy.

Phi Alpha Chapter, Rho Pi Phi Fraternity Cup

The Phi Alpha Chapter of the Rho Pi Phi Fraternity provides a cup to be awarded annually to the Fifth Year student selected by the Faculty Assembly as having exhibited outstanding qualities of character and leadership.

Alpha Zeta Omega Fraternity Prize

The Kappa Chapter and the Maryland Alumni Chapter of the Alpha Zeta Omega Fraternity provide a prize to be awarded annually to the Fifth Year student chosen by the Faculty Assembly for proficiency in pharmacology.

Epsilon Alumnae Chapter, Lambda Kappa Sigma Sorority Prize

The Epsilon Alumnae Chapter of the Lambda Kappa Sigma Sorority provides annually a key which is awarded to the Fifth Year student selected by the Faculty Assembly for outstanding proficiency in Pharmacy Administration.

Merck Award

Merck & Company, Inc., Rahway, New Jersey, offers a set of valuable reference books to the Fifth Year student who attains a high standing in pharmacy or pharmaceutical chemistry.

Bristol Laboratories, Inc., Award

A copy of Gould's "Medical Dictionary" is made available by Bristol Laboratories, Inc., to the Fifth Year student who has contributed the most to pharmacy through his extra-curricular activities.

Rexall Award

The Rexall Drug Company provides a Mortar and Pestle Trophy to the Fifth Year student who has demonstrated outstanding qualities of both leadership and scholarship.

Extra Curricular Awards

Students who have given freely of their time for the betterment of the School in extra curricular activities, receive extra curricular keys at the School of Pharmacy Convocations.

STUDENT ORGANIZATIONS (BALTIMORE CAMPUS)

Student Government Alliance

The Student Government Alliance of the School of Pharmacy is an organization of undergraduate students established for the purpose of aiding in the internal administration of the school for organizing all extra curricular programs and activities of the student body and for coordinating these programs and activities with those of the Faculty and Administration to foster mutual understanding and cooperation. The Executive Council of the Student Alliance is composed of the President of the Student Government Alliance, the Presidents of the respective classes, and one delegate elected from each undergraduate class.

The American Pharmaceutical Association and the Maryland Pharmaceutical Association Student Chapter, University of Maryland, School of Pharmacy.

The purpose of the Student Chapter is to encourage in the broadest and more liberal manner the advancement of pharmacy as a science and as a profession in accordance with the objectives stated in the Constitution of the American Pharmaceutical Association and the Constitution of the

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Maryland Pharmaceutical Association, respectively, especially in fostering education in matters involving pharmacy in all of its branches and its application and aiding in promoting the public health and welfare.

Inter-Professional Student Senate

The students of the Baltimore Professional Schools of Dentistry, Law, Medicine, Nursing and Pharmacy established the Inter-Professional Student Senate for purposes of coordinating and facilitating relationships among the Professional Schools and the University Units at College Park. The Senate is comprised of representatives from each of the five professional schools.

Committee on School of Pharmacy of the Maryland Pharmaceutical Association (1963-1964)

When the School of Pharmacy became a part of the State University in 1920, the Maryland Pharmaceutical Association appointed a standing committee known as the Committee on the School of Pharmacy. The duties of this group are to represent the Association in all matters pertaining to the School of Pharmacy and pharmaceutical education. The present members of the Committee are:

Irving I. Cohen, *Chairman*
Morton J. Schnaper, *Co-Chairman*

Halcolm S. Bailey	Aaron M. Libowitz
James P. Cragg, Jr.	Victor H. Morgenroth, Jr.
Joseph U. Dorsch	Gordon A. Mouat
Clinton W. Englander	Samuel I. Raichlen
Milton A. Friedman	Henry G. Seidman
Carleton W. Hanks	Morris R. Walman

ALUMNI ASSOCIATION

A meeting of the graduates of the School of Pharmacy of the University of Maryland, then the Maryland College of Pharmacy, was held on May 15, 1871. At this meeting there was organized the Society of the Alumni of the Maryland College of Pharmacy. This Society continued its separate existence as such or as the Alumni Association of the Maryland College of Pharmacy until 1907, when the General Alumni Association of the University of Maryland was formed. Following the organization of the General Alumni Association, the Society remained dormant until June 4, 1926, when it was reorganized as the Alumni Association of the School of Pharmacy, University of Maryland. Each year it is more evident that interest in the Alumni Association is not only maintained, but is growing.

Officers (1963-1964)

Melville Strasburger (1900)	Honorary President
Milton A. Friedman (1934)	President
Robert J. Kokoski (1952)	1st Vice-President
Harold P. Levin (1943)	2nd Vice-President
Frank J. Slama (1924)	Executive Secretary
H. Nelson Warfield (1924)	Treasurer

Executive Committee (Elected Members)

Sam A. Goldstein (1930) — Chairman

Thomas C. Dawson (1955)

Casimir T. Ichniowski (1929)

Aaron M. Libowitz (1932)

Alan Settler (1955)

Vito Tinelli, Jr. (1961)

Solomon Weiner (1924)

PROFESSIONAL CURRICULUM

COURSES, HOURS AND CREDITS

Title and Number of Course	First Semester				Second Semester			
	Hrs. Per Week				Hrs. Per Week			
	Didactic	Laby	Total	Credits	Didactic	Laby	Total	Credits
Third Year (Required)								
Anatomy 31, Mammalian Anatomy and Histology	2	6	8	4				
Pharmaceutical Chemistry 30, 32, Principles of Organic Chemistry	3	4	7	4	3	4	7	4
Pharmaceutical Chemistry 34, Quantitative Pharmaceutical Analysis					2	6	8	4
Pharmacy 31, Mathematics of the Pharmaceutical Sciences	3		3	3				
Pharmacy 33, 34, Processes and Dosage Forms	3	3	6	4	3	3	6	4
Pharmacy 35, Professional Communications	2		2	2				
Pharmacy 38, History of Pharmacy					3		3	3
Pharmacy Administration 36, Accounting					2	3	5	3
				17				18
Fourth Year (Required)								
First Aid 1, Standard	1		1					
Microbiology 41, Pharmaceutical Microbiology	2	4	6	4				
Microbiology 146, Serology, Immunology, Public Health and Parasitology					2	4	6	4
Pharmaceutical Chemistry 149, Principles of Biochemistry	4	4	8	5				
Pharmacognosy 41, 42, General Pharmacognosy	2	3	5	3	2	3	5	3
Pharmacy 43, 44, Pharmaceutical Technology	2	4	6	3	2	4	6	3
Physiology 142, General Physiology					3	6	9	5
†Electives				3-4				3-4
				18-19				18-19
†(Electives—General Pharmacy Major)								
Pharmacy Administration 41, Marketing	3		3	3				
Pharmacy Administration 42, Pharmacy Management I					2	3	5	3
†(Electives—Pre-Graduate Major)								
†Mathematics 20, 21, Calculus	4		4	4	4		4	4
Fifth Year (Required)								
Pharmacology 155, 156, General Pharmacology	3	3	6	4	4	3	7	5
Pharmacy 151, Professional Pharmacy	1	3	4	2				
Pharmacy 153, 154, Dispensing	2	3	5	3	2	3	5	3
Pharmacy Administration 51, 52, Pharmaceutical Jurisprudence	2		2	2	2		2	2
Pharmaceutical Chemistry 151, 152, Chemistry of Medicinal Products	3		3	3	3		3	3
†Electives				5-6				5-6
				19-20				18-19
†(Electives—General Pharmacy Major)								
Pharmacognosy 51, Entomology for Pharmacists	2	3	5	3	3		3	3
Pharmacognosy 52, Animal Health Products								
OR								
Pharmacy 156, Cosmetics and Dermatological Preparations					2	3	5	3
Pharmacy Administration 53, 54, Pharmacy Management II, III	2		2	2	2		2	2
†(Electives—Hospital Major)								
Pharmacognosy 51, Entomology for Pharmacists	2	3	5	3				
Pharmacy 157, Hospital Pharmacy Administration	2		2	2				
Pharmacy 156, Cosmetics and Dermatological Preparations					2	3	5	3
Pharmacy 158, Orientation to Hospital Administration					2		2	2
†(Electives—Pre-Graduate Major)								
Chemistry 187, 189, Physical Chemistry	3		3	3	3		3	3
Chemistry 188, 190, Physical Chemistry Laboratory		6	6	2		6	6	2
OR								
†Pharmacy 161, 162, Special Problems	1	3	4	2		6	6	2
†(Electives—Pre-Graduate Major)								
(Transfers from General Pharmacy Major)								
†Mathematics 20, 21, Calculus	4		4	4	4		4	4
†Pharmacy 161, 162, Special Problems	1	3	4	2		6	6	2

† Required of Fifth-Year students transferring from General Pharmacy Major to Pre-Graduate Major. See page 16.

‡ The electives must be approved by the Class Advisor and Dean.

PROFESSIONAL CURRICULUM—ELECTIVE PROGRAM

SUMMARY OF HOURS AND CREDITS

Course	Didactic	Laboratory	Total	Credit Hours
Third Year				
Anatomy 31	32	96	128	4
Pharmaceutical Chemistry 30, 32	96	128	224	8
Pharmaceutical Chemistry 34	32	96	128	4
Pharmacy 31	48		48	3
Pharmacy 33, 34	96	96	192	8
Pharmacy 35	32		32	2
Pharmacy 38	48		48	3
Pharmacy Administration 36	32	48	80	3
Total	416	464	880	35
Fourth Year				
First Aid 1	16		16	
Microbiology 41	32	64	96	4
Microbiology 146	32	64	96	4
Pharmaceutical Chemistry 149	64	64	128	5
Pharmacognosy 41, 42	64	96	160	6
Pharmacy 43, 44	64	128	192	6
Physiology 142	48	96	144	5
Total	320	512	832	30
Fifth Year				
Pharmacology 155, 156	112	96	208	9
Pharmacy 151	16	48	64	2
Pharmacy 153, 154	64	96	160	6
Pharmacy Administration 51, 52	64		64	4
Pharmaceutical Chemistry 151, 152	96		96	6
Total	352	240	592	27

PROFESSIONAL CURRICULUM—ELECTIVE PROGRAMS *

SUMMARY OF HOURS AND CREDITS

Course	Didactic	Laboratory	Total	Credit Hours
Fourth Year				
(General Pharmacy Major)				
Pharmacy Administration 41	48		48	3
Pharmacy Administration 42	32	48	80	3
(Pre-Graduate Major)				
Mathematics 20, 21	128		128	8
Fifth Year				
(General Pharmacy Major)				
Pharmacognosy 51	32	48	80	3
Pharmacognosy 52	48		48	3
or		or		
Pharmacy 156	32	48	80	3
Pharmacy Administration 53, 54	64		64	4
(Hospital Major)				
Pharmacognosy 51	32	48	80	3
Pharmacy 157	32		32	2
Pharmacy 156	32	48	80	3
Pharmacy 158	32		32	2
(Pre-Graduate Major)				
Chemistry 187, 189	96		96	6
Chemistry 188, 190		192	192	4
or		or		
Pharmacy 161, 162	16	144	160	4
(Pre-Graduate Major)				
(Transfers from General Pharmacy Major)				
Mathematics 20, 21	128		128	8
Pharmacy 161, 162	16	144	160	4
†TOTALS OF HOURS AND CREDITS				
Fourth Year				
General Pharmacy Major	80	48	128	6
Pre-Graduate Major	128		128	8
Fifth Year				
General Pharmacy Major	144	48	192	10
		or		
	128	96	224	10
Hospital Major	128	96	224	10
Pre-Graduate Major	96	192	288	10
		or		
Pre-Graduate Major	112	144	256	10
(Transfers from General Pharmacy Major)	144	144	288	12

* The electives must be approved by the Class Advisor and Dean.

† Minimum credit hour requirements of instruction in the Professional Curriculum are:

- (a) General Pharmacy Major, 108 credit hours; (b) Hospital Major, 108 credit hours; (c) Hospital Major (Transfers from Pre-Graduate Major), 110 credit hours; and (d) Pre-Graduate Major, 110 credit hours. Also, consult pages 16 and 17 concerning

DESCRIPTION OF COURSES

PROFESSIONAL CURRICULUM

ANATOMY

31. MAMMALIAN ANATOMY AND HISTOLOGY. (4)

Third Year, first semester, two lectures and two laboratories.

(Costello and Darago.)

A study of the gross anatomy and histology of mammalian types. The course is designed to provide an understanding of the various anatomical systems, with particular emphasis on human structures.

FIRST AID

1. FIRST AID COURSE. (0)

Fourth Year, first semester, one lecture, one demonstration. Mr. Gregson, instructor from the Baltimore Chapter of the American Red Cross.

MATHEMATICS

20, 21. CALCULUS. (4, 4)

Fourth Year and Fifth Year, four lectures

(Dean.)

Prerequisite—Mathematics 18, 19 and/or approval of instructor. Limits, derivatives, differentials, maxima and minima, curve sketching, rates, curvature, kinematics, integration, geometric and physical application on integration, partial derivatives, space geometry, multiple integrals, infinite series and differential equations.

For Graduates and Advanced Undergraduates

130. INTRODUCTION TO PROBABILITY THEORY I. (3)

First semester. Prerequisite, Math. 22, or equivalent. Sample space, events, probability and its basic properties. Independence and conditioning, random variables, distribution functions (continuous and discrete); typical distributions, expectations, moments, generating functions; transformations of random variables, limit theorems.

(Dean.)

132. INTRODUCTION TO STATISTICS. (3)

Second semester, three lectures and one hour of laboratory per week. Prerequisite, Math. 130. Sampling distributions, elements of point and set estimation, maximum likelihood principle, testing statistical hypotheses, standard tests. Neyman-Pearson lemma and problems of optimality of tests, linear hypotheses, sequential methods.

(Dean.)

MICROBIOLOGY

41. PHARMACEUTICAL MICROBIOLOGY. (4)

Fourth Year, first semester, two lectures and two laboratories.

(Shay and Becker.)

Prerequisites, Pharmaceutical Chemistry 30, 32. This course is designed especially for pharmacy students and includes practice and theoretical consideration of bacteria, both pathogenic and nonpathogenic, viruses, rickettsia, yeasts and molds.

Laboratory teaching includes methods of staining and the preparation of media; cultural characteristics of bacteria; emphasis is given to the study of disinfectants, antiseptics, germicides and sterilization, antibiotics and their antibacterial action, microbiological assay, sensitivity testing and virus techniques. Experiments are included for the bacteriological evaluation of milk, water, food and air.

For Graduates and Advanced Undergraduates

**146. SEROLOGY, IMMUNOLOGY, PUBLIC HEALTH
AND PARASITOLOGY. (4)**

Fourth Year, second semester, two lectures and two laboratories.

(Shay and Becker.)

Prerequisite, Microbiology 41. A study of the principles of immunity, including the preparation and use of biological products such as sera, vaccines, toxins, toxoids, etc. Special attention is given to hypersensitivity of humans and animals to sensitizing substances, drug idiosyncracies, hay fever, food allergies, contact dermatosis, and animal inoculation. Part of the course is devoted to the study of Public Health. Time is given to the study of medical parasitology, pathology and parasitic infections, immunity, transmission, diagnosis, treatment and prevention of parasitic diseases.

For Graduates

200, 201. CHEMOTHERAPY. (1, 1).

One lecture. (Given in alternate years.)

(Shay.)

A study of the chemistry, toxicity, pharmacology and therapeutic value of drugs employed in the treatment of parasitic diseases.

202, 203. REAGENTS AND MEDIA. (1, 1)

One lecture. (Given in alternate years.)

(Shay.)

A study of the methods of preparation and use of microbiological reagents and media.

210. SPECIAL PROBLEMS IN MICROBIOLOGY.

A laboratory course on selected problems in microbiology. Credit determined by the amount and quality of work performed.

(Shay.)

211. PUBLIC HEALTH. (1-2)

One lecture.

(Shay.)

Prerequisite, Microbiology 41, 146. Lectures and discussions on the organization and administration of state and municipal health departments and private health agencies. The courses will also include a study of laboratory methods.

399. RESEARCH IN MICROBIOLOGY.

Credit determined by the amount of work performed.

(Shay.)

PHARMACEUTICAL CHEMISTRY

30, 32. PRINCIPLES OF ORGANIC CHEMISTRY. (4, 4)

Third Year, two lectures, one recitation, one laboratory. (Miller and Meyer.)
A study of the principles of organic chemistry.

34. QUANTITATIVE PHARMACEUTICAL ANALYSIS. (4)

Third Year, second semester, two lectures and two laboratories.
(Zenker, Heyman and Rhodes.)

Prerequisites, Pharmaceutical Chemistry 30, 32 or equivalent. A study of quantitative analytical methods applied to the chemical assay of crude drugs and official preparations with emphasis on instrumental methods.

For Graduates and Advanced Undergraduates

141, 143. ADVANCED ORGANIC CHEMISTRY. (2, 2)

Two lectures. (Miller.)
Prerequisites, Chemistry 35, 36, 37, 38, or equivalent. An advanced study of the compounds of carbon.

144. ADVANCED ORGANIC LABORATORY. (2)

Two laboratories. (Miller.)
Prerequisite, Chemistry 37, 38 or equivalent. Laboratory work devoted to more complicated organic preparations.

146, 148. IDENTIFICATION OF ORGANIC COMPOUNDS. (2, 2)

One lecture, two laboratories. (Miller and Doorenbos.)
Prerequisite, Chemistry 141, 143, or equivalent. The systematic identification of organic compounds.

149. PRINCIPLES OF BIOCHEMISTRY. (5)

Fourth Year, first semester, four lectures and one laboratory.
(Zenker and Heyman)
Prerequisites, Pharmaceutical Chemistry 32, 34. Lectures and laboratory exercises devoted to the composition of living organisms and the chemical and physical processes which occur during health and in disease.

151, 152. CHEMISTRY OF MEDICINAL PRODUCTS. (3, 3)

Fifth Year, three lectures. (Doorenbos.)
Prerequisites, Pharmaceutical Chemistry 30, 32. A survey of the structural relationships, synthesis and chemical properties, principally of organic medicinal products.

187, 189. PHYSICAL CHEMISTRY. (3, 3)

Fifth Year, three lectures. (Leslie.)
Prerequisites, Chemistry 15, 35, 37, Physics 10, 11, Mathematics 20, 21. A study of the laws and theories of chemistry, including the gas laws, kinetic theory, liquids, solutions, elementary thermodynamics, thermochemistry, equilibrium, chemical kinetics and electrochemistry.

188, 190. PHYSICAL CHEMISTRY. (2, 2)

Fifth Year, two laboratories.

(Leslie and Rhodes.)

Prerequisites, Chemistry 187, 189 or concurrent registration. Quantitative experiments are performed which demonstrate physio-chemical principles, and acquaint the student with precision apparatus.

For Graduates

230. SEMINAR. (1)

Each semester.

(Staff.)

Required of students majoring in pharmaceutical chemistry. Reports of progress and survey of recent developments in chemistry.

232. ADVANCED ORGANIC SYNTHESIS. (2)

Two laboratories.

(Miller and Doorenbos.)

Prerequisite, Chemistry 144. Library and laboratory work designed to offer experience in the more difficult organic syntheses and in new techniques.

235. PRINCIPLES OF STEREOCHEMISTRY. (2)

Two lectures.

(Miller.)

Prerequisites, Chemistry 141, 143. A study of the principles of stereochemistry of organic compounds.

242 HETEROCYCLIC CHEMISTRY. (2)

Two lectures.

(Doorenbos.)

Prerequisite, Chemistry 141, 143. A study of the chemistry and synthesis of heterocyclic compounds.

250. STEROIDS. (2)

Two lectures.

(Doorenbos.)

Prerequisites, Chemistry 141, 143. A study of the synthesis and structure determination of steroids and the application of modern chemical concepts to the chemistry of steroids.

252. ALKALOIDS. (2)

Two lectures.

(Miller.)

Prerequisites, Chemistry 141, 143. A study of the principles involved in structure determination, chemistry and synthesis of the major alkaloidal classes.

253, 254. ADVANCED CHEMISTRY OF MEDICINAL PRODUCTS. (2, 2)

Two lectures.

(Doorenbos.)

Prerequisites, Pharmaceutical Chemistry 141, 143, 151, 152 or permission of the instructor. A study of structural relationships and basic principles concerned with the physical and chemical mechanisms of drug action, e.g., structure activity relationships, physical properties and biological activity, cellular transport, drug, protein binding, biological receptors, lipid storage and physico-chemical mechanisms of drug action.

255. INSTRUMENTAL METHODS OF ANALYSIS. (2)

Either semester, two laboratories.

(Zenker and Leslie.)

Prerequisites, Chemistry 187, 188, 189, 190 or equivalent.

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271. BIOPHYSICAL CHEMISTRY. (2)

Two lectures.

(Leslie.)

Prerequisite, Pharmaceutical Chemistry 149; Chemistry 189. The application of physical chemistry principles to biological systems, and a discussion of the physical properties of biologically important macromolecules.

272. SELECTED TOPICS IN PHYSICAL CHEMISTRY. (2)

Two lectures.

(Leslie)

Prerequisite, Chemistry 189. A discussion of selected topics of particular interest in the pharmaceutical sciences, including surface chemistry, colloids, kinetics, colligative properties and absorption spectroscopy.

274. ADVANCED PHYSICAL CHEMISTRY LABORATORY. (1)

One laboratory.

Prerequisite, Chemistry 190. Selected experiments which are necessary for, and a part of, a larger research effort.

281. PHARMACEUTICAL BIOCHEMISTRY. (2)

Two lectures.

(Zenker.)

Prerequisite, Pharmaceutical Chemistry 149. A discussion of the relationships between drugs and enzymes, with emphasis on drug action at the enzymatic level and on drug metabolism.

282. PHARMACEUTICAL BIOCHEMISTRY LABORATORY. (2)

Two laboratories.

(Zenker.)

Prerequisite, Pharmaceutical Chemistry 281 or permission of the instructor. Laboratory experiments designed to illustrate the use of modern techniques and metabolic methods in the study of drug action and drug metabolism.

399. RESEARCH IN PHARMACEUTICAL CHEMISTRY.

Credit determined by the amount and quality of work performed. (Staff.)

PHARMACOGNOSY

41. PHARMACOGNOSY, GENERAL. (3)

Fourth Year, first semester, two lectures and one laboratory.

(Slama and Lleander)

Prerequisites, Pharmaceutical Chemistry 30, 32. A study of the cultivation, collection, and commerce of crude vegetable drugs with special emphasis on the physical and microscopical characteristics used in their identification and in the detection of adulteration.

42. PHARMACOGNOSY, GENERAL. (3)

Fourth Year, second semester, two lectures and one laboratory.

(Slama and Lleander.)

Prerequisite, Pharmacognosy 41. A continuation of Pharmacognosy 41 with instruction covering drugs of animal origin and allergy-producing pollens. Special emphasis is placed upon official and non-official chemical tests used in the identification of drugs and their constituents.

51. PHARMACOGNOSY, ENTOMOLOGY FOR PHARMACISTS. (3)

Fifth Year, first semester, two lectures and one laboratory.

(Slama and Lleander.)

Prerequisites, Pharmacognosy 41, 42.

A discussion of the principal types of pests commonly found in the household and the industries, including those which attack farm and garden crops; their recognition, life history, and methods of control.

52. PHARMACOGNOSY, ANIMAL HEALTH PRODUCTS. (3)

Fifth Year, second semester, three lectures.

(Slama.)

Prerequisites, Pharmacognosy 41, 42; Pharmacology 155.

A study of principal pharmaceutical agents that are used in the treatment and prevention of animal diseases.

For Graduates and Advanced Undergraduates

101, 102. TAXONOMY OF THE HIGHER PLANTS. (2, 2)

One lecture and one laboratory. Given in alternate years.

(Slama.)

Prerequisites, Pharmacognosy 41, 42. A study of the kinds of seed plants and ferns, their classifications, and field work on local flora. Instruction will be given in the preparation of an herbarium.

111, 112. PLANT ANATOMY. (4, 4)

Two lectures and two laboratories.

(Slama.)

Prerequisites, Pharmacognosy 41, 42. Lectures and laboratory work covering advanced plant anatomy with special emphasis placed on the structure of roots, stems and leaves of vascular plants.

For Graduates

201, 202. ADVANCED STUDY OF VEGETABLE POWDERS. (4, 4)

Two lectures and two laboratories.

(Slama.)

Prerequisites, Pharmacognosy 111, 112. A study of powdered vegetable drugs and spices from the structural and microchemical standpoints, including practice in identification and detection of adulterants. Given in alternate years.

211, 212. ADVANCED PHARMACOGNOSY. (4, 4)

Two lectures and two laboratories.

(Slama.)

Prerequisites, Pharmacognosy 111, 112. A study of many crude drugs not ordinarily studied in other pharmacognosy courses. Special attention will be given to practical problems and to the identification and detection of adulterants.

399. RESEARCH IN PHARMACOGNOSY.

Credit according to the amount and quality of work performed.

(Slama.)

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PHARMACOLOGY

For Graduates and Advanced Undergraduates

155, 156. PHARMACOLOGY, GENERAL. (4, 5)

Fifth Year, three lectures and one laboratory first semester; four lectures and one laboratory second semester. (Ichniowski and Diamond.)

Prerequisites, Physiology 142; Pharmaceutical Chemistry 149 or consent of the instructor. A study of the pharmacology, toxicology, posology, untoward effects, precautions and therapeutic applications of medicinal substances.

171. OFFICIAL METHODS OF BIOLOGICAL ASSAY. (4)

Two lectures and two laboratories. (Ichniowski.)

Prerequisites, Pharmacology 155, 156. A study of the methods of biological assay official in the United States Pharmacopoeia and the National Formulary.

For Graduates

201, 202. METHODS OF BIOLOGICAL ASSAY. (4, 4)

Laboratory and conferences, first and second semesters. (Ichniowski.)

Prerequisite, Pharmacology 171. Offered in alternate years.

211, 212. SPECIAL STUDIES IN PHARMACODYNAMICS. (4, 4)

Laboratory and conferences, first and second semesters. (Ichniowski.)

Prerequisites, Pharmacology 155, 156, and the approval of the instructor. Offered in alternate years.

221, 222. SPECIAL STUDIES IN BIOLOGICAL ASSAY
METHODS. (2-4), (2-4)

Credit according to the amount of work undertaken after consultation with the instructor. Conferences and laboratory work. (Ichniowski.)

Prerequisites, Pharmacology 171, 201, 202. Special problems in the development of biological assay methods and comparative standards.

399. RESEARCH IN PHARMACOLOGY.

Properly qualified students may arrange with the instructor for credit and hours. (Ichniowski.)

PHARMACY

31. MATHEMATICS OF THE PHARMACEUTICAL SCIENCES. (3)

Third Year, first semester, three lectures. (Lamy.)

Applied calculations in all fields of pharmaceutical sciences with emphasis on problem solving in systems of measurement, aliquot methods, alligation, HLB systems, isotonicity, chemical reactions, commercial problems, drug absorption, and the interpretation and evaluation of experimental data.

33, 34. PROCESSES AND DOSAGE FORMS. (4, 4)

Third Year, three lectures and one laboratory. (Lamy, Block and Augsburg.)
 Pharmacy 31 and 33 are prerequisites to Pharmacy 34. Commentary on the official compendia of pharmacy. Includes pharmaceutical manipulations and processes for preparing official dosage forms. Particular emphasis is placed on physical and chemical properties of ingredients, common nomenclature and synonyms, storage conditions and uses.

35. PROFESSIONAL COMMUNICATIONS. (2)

Third Year, first semester, two lectures. (Ballman.)
 Oral and written expression on subjects of pharmaceutical use and interest. Bibliographical methods, oral and written reports and communications, conduct of discussion groups, audio-visual aids.

38. HISTORY OF PHARMACY. (3)

Third Year, second semester, three lectures. (Ballman.)
 A survey of the history of pharmacy and the allied sciences, with emphasis on those aspects of science most pertinent to the interests of the pharmacist. Research papers and reports required.

43, 44. PHARMACEUTICAL TECHNOLOGY. (3, 3)

Fourth Year, two lectures, one laboratory and one recitation.
 (Shangraw, Block and Augsburg.)
 Prerequisites, Pharmacy 31, 33 and 34. The physical-chemical principles involved in pharmaceutical systems and the application of this knowledge to the development, preparation and packaging of medicinal formulations.

For Graduates and Advanced Undergraduates

151. PROFESSIONAL PHARMACY. (2)

Fifth Year, first semester, one lecture and one laboratory.
 (Shangraw, Lamy.)
 Prerequisite, Pharmacy 44. Preparation for the major fields of pharmaceutical specialization by rotation through the school model pharmacy and manufacturing pharmacy laboratories as well as the inpatient and outpatient hospital pharmacy departments.

153, 154. DISPENSING PHARMACY. (3, 3)

Fifth Year, two lectures and one laboratory. (Allen.)
 Prerequisite, Pharmacy 44. Professional laboratory practice and other specialized activities pertaining to prescriptions, including an evaluation of compounding aids and commercial pharmaceuticals.

156. COSMETICS AND DERMATOLOGICAL PREPARATIONS. (3)

Fifth Year, second semester, two lectures and one laboratory. (Allen.)
 Prerequisite, Pharmacy 153. A study of the composition and manufacture of preparations including laboratory work in the formulation of cold cream, vanishing cream, protective cream, hand lotion, hair tonic, shampoo, face powder, dusting powder, lipstick, mascara, toothpaste, deodorants, depilatories, suntan preparations, etc. The acid-mantle of the skin and hypoallergenic preparations are also emphasized.

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157. HOSPITAL PHARMACY ADMINISTRATION. (2)

Fifth Year, first semester, two lectures.

(Purdum.)

Prerequisite, Pharmacy 44. The fundamentals of hospital pharmacy practice and administration. Includes a study of the history and development of hospital pharmacy, physical facilities, minimum standards, purchasing, the formulary, manufacturing, record keeping and dispensing practices, with supervised practical experience in selected hospital pharmacies.

158. ORIENTATION TO HOSPITAL ADMINISTRATION. (2)

Fifth Year, second semester, two lectures.

(Staff.)

The increasing role of the hospital in general health facilities and the increasing responsibility of the pharmacist in hospital activities necessitate some orientation in hospital administration. The course will consist of a discussion of the history and development of hospitals, classification of hospitals, organization, governing authorities, the administrator, the medical staff, and special departments of the hospital, including pharmacy, nursing, dietary, engineering, accounting, housekeeping, laundry, purchasing, public relations and personnel.

161, 162. SPECIAL PROBLEMS. (2, 2)

Prerequisites, Mathematics 20, 21 or concurrent registration. Independent investigations in the several pharmaceutical sciences, consisting of library and laboratory research and seminars.

(Staff.)

For Graduates

201, 202. INDUSTRIAL PHARMACY. (3, 3)

Three lectures. Given in alternate years.

(Shangraw.)

Prerequisites, Pharmacy 153, 154. A study of manufacturing processes, control procedures and equipment employed in the manufacture of pharmaceuticals on a commercial scale, including new drug applications, patents and the Federal Food, Drug and Cosmetic Act.

203, 204. INDUSTRIAL PHARMACY. (2, 2)

Two laboratories.

(Shangraw.)

Prerequisites, Pharmacy 201, 202, or may be taken simultaneously with Pharmacy 201, 202. Laboratory work dealing with the preparation of useful and important pharmaceuticals in large quantities.

207, 208. PHYSICAL PHARMACY. (2, 2)

Two lectures a week.

(Shangraw.)

Prerequisites, Physical Chemistry 187, 188, 189, 190. A study of pharmaceutical systems utilizing the fundamentals of physical chemistry.

211, 212. SURVEY OF PHARMACEUTICAL LITERATURE. (1, 1)

One lecture. Given in alternate years.

(Allen.)

Lectures and topics on the literature pertaining to pharmacy, with special reference to the origin and development of the works of drug standards and the pharmaceutical periodicals.

215, 216. PRODUCT DEVELOPMENT. (2, 2)

Two laboratories.

(Allen.)

Prerequisites, Pharmacy 156, 201, 202, 203, 204. A study of the development of new pharmaceutical preparations and cosmetics suitable for marketing.

221, 222. HISTORY OF PHARMACY. (2, 2)

Two lectures. (Purdum.)
Lectures and assignments on the development of pharmacy in America and the principal countries of Europe. Given in alternate years.

230. PHARMACEUTICAL SEMINAR. (1)

Each semester. (Shangraw)
Required of students majoring in pharmacy. Reports of progress in research and surveys of recent developments in pharmacy.

231, 232. SPECIAL PROBLEMS IN PHARMACEUTICAL TECHNOLOGY. (2, 2)

Two laboratories. (Allen.)
A study of technical problems in the stabilization and preservation of pharmaceuticals and the various methods of compounding special prescriptions.

399. RESEARCH IN PHARMACY.

Credit and hours to be arranged. (Foss, Purdum, Allen, and Shangraw.)

PHARMACY ADMINISTRATION

36. ACCOUNTING. (3)

Third Year, second semester, two lectures and one laboratory. (Leavitt and Augsburg.)
A study of the fundamental principles of accounting, especially as it concerns the practice of community pharmacy.

41. DRUG MARKETING. (3)

Fourth Year, first semester, three lectures. (Leavitt.)
Prerequisite, Economics 37 or its equivalent. This is an introductory course in the field of marketing with special emphasis on the marketing of drug products. Its purpose is to give a general understanding and appreciation of the forces operating, institutions employed, and methods followed in marketing drug products, natural products, services, and manufactured goods.

42. PHARMACY MANAGEMENT I. (3)

Fourth Year, second semester, two lectures and one laboratory. (Leavitt.)
Prerequisite, Pharmacy Administration 41. A study of the application of accounting, marketing and merchandising principles to the operation of a community pharmacy, including financial statement analysis, pricing, inventory and expense management and control.

51, 52. PHARMACEUTICAL JURISPRUDENCE. (2, 2)

Fifth Year, two lectures. (Kaufman.)
Fundamentals of law of importance to pharmacists; Federal and State laws and regulations pertaining to the sale of drugs, narcotics, poisons, cosmetics and pharmaceutical preparations; Law of Contracts, Negotiable Instruments, Sales, Agency and Partnerships.

53, 54. PHARMACY MANAGEMENT II, III. (2, 2)

Fifth Year, two lectures. (Leavitt.)
Prerequisite, Pharmacy Administration 42. A study of the management problems of community pharmacy, including organization, staffing, directing, planning and control.

PHYSIOLOGY

For Graduates and Advanced Undergraduates

142. GENERAL PHYSIOLOGY. (5)

Fourth Year, second semester, three lectures and two laboratories.

(Costello and Darago.)

Prerequisite, Anatomy 31. A course in the fundamentals of mammalian physiology including the structure and permeability of the cell membrane, neurophysiology, muscle physiology, the circulatory system, the respiratory system, the digestive system, the excretory system, endocrinology, metabolism, and the special senses.

For Graduates

245. CELLULAR PHYSIOLOGY AND CYTOGENETICS. (3)

First semester, three lectures.

(Costello.)

Prerequisites, Pharmaceutical Chemistry 149, Physiology 142. Consent of instructor. The lectures will relate to the physical and chemical properties of protoplasm to the functional problems of the plasma membrane, cytoplasm, golgi apparatus, microsomes, nucleus, mitochondrial structure and their contributions to the integrated cellular activity. The physical and chemical phenomena of cell division and inheritance will be discussed.

246. RADIOISOTOPE TECHNIQUE. (3)

Second semester, one lecture and two laboratories.

(Costello.)

Prerequisites, consent of instructor. A course concerned with the practical use of isotopes particularly as tracers in metabolic investigations.

399. RESEARCH IN PHYSIOLOGY.

Credit determined by the amount and quality of work performed. (Costello.)

ROLL OF STUDENTS, SESSION 1963-64

Graduate Students †

Augsburger, Larry L.	Maryland
*Batt, William H.	Maryland
*Barnett, Lisa	Maryland
Beals, P. Loring	Idaho
Block, Lawrence H.	Maryland
Bossle, Paul C.	Louisiana
*Bradenbaugh, Don L.	Maryland
Brodeur, Richard J.	Connecticut
Brown, Sister Jane Marie	Maryland
Caplan, Yale H.	Maryland
§Cutcher, James L.	Maryland
Darago, Lillian L.	Maryland
Dietz, Albert J., Jr.	Maryland
*Doane, Marshall G.	New York
§Duda, Marija M.	Maryland
*Duffy, Thomas E.	Maryland
Fox, Chester D.	New York
*Fried, Irving M.	Maryland
Goldsmith, Robert H.	Maryland
Guyton, Charles L.	Mississippi
*Hammel, Claire L.	Maryland
§Heifetz, Carl L.	Maryland
Heyman, Irwin A.	Maryland
Inguanti, Luciano	Maryland
§Kanhour, Anisa I.	Iraq
Lleander, Glory C.	Philippines
McDonald, Donald E.	Pennsylvania
McKelvey, Cornelius P.	Pennsylvania
McMillion, Cecil Robert	Maryland
Meyer, Francis J.	Louisiana
Milkowski, John D.	Maryland
Murthy, Vadiraja Nenkatesa	India
Probst, Robert T.	Maryland
Rhodes, Robert A.	Virginia
Richman, M. David	Maryland
Scott, Kenneth R.	District of Columbia
Smith, Willard N.	Maryland
Stein, Martin E.	Maryland
Tinney, Francis J.	New York
Vora, Kakubhai M.	India
Wagner, Frederick H.	Maryland
Walkling, Walter D.	Maryland
Wang, Theodore	China
Warfield, Albert H.	Maryland
Warthen, J. David, Jr.	Maryland
*Webb, George Schettler	Maryland
Whang, Clara	China

†Registered in Graduate School.

*Did not attend entire session.

§Second Semester only.

UNIVERSITY OF MARYLAND

Fifth Year (Five Year Program)

DelCastilho, Ronald E.	Maryland
Wynn, Richard L.	Maryland

Fourth Year (Five Year Program)

Brauner, Robert P.	New York
Brundelre, Robert	Maryland
Catlett, Leon R.	Maryland
Cavoures, James A.	Maryland
Conrad, John W., Jr.	Maryland
Cooney, John R.	Maryland
Cysyk, Richard L.	Maryland
Dolecek, Gayle R.	Maryland
Elliott, William R.	Maryland
Frangakis, Mina S.	Maryland
Gamerman, Marvin I.	Maryland
Glover, Wayne A.	Maryland
Goldberg, Marvin	Maryland
*Goldman, William I.	Maryland
Hoffman, Robert W.	Maryland
Kroopnick, Robert B.	Maryland
Libowitz, Suzanne J.	Maryland
Miller, Harris L.	Maryland
Mintz, Martin B.	Maryland
Myers, Mary L.	Maryland
Rachanow, Gerald M.	Maryland
Schutz, Charles J.	Maryland
Sollod, Ralph M.	Maryland
Walsh, Michael J.	Maryland
Williams, Cornelius B.	Maryland
Wolfson, Israel D.	Maryland

Third Year (Five Year Program)

Alatzas, George T.	Maryland
Avery, Carolyn J.	Maryland
Berry, John T.	Maryland
Bloom, Barry L.	Maryland
Christian, Mitchell A.	Maryland
Cohen, Michael J.	Maryland
Courpas, Anthony L.	Maryland
Dailey, John W.	Maryland
*DonBullian, Ronald F.	Maryland
Donnelly, John A.	Maryland
Edmondson, William H.	Maryland
Eng, Frederick	Maryland
Erdman, Sheldon N.	Maryland
Fine, Norman F.	Maryland

* First semester only

SCHOOL OF PHARMACY

Fischer, Bernard A., III	Maryland
Fleischer, Charles A.	Maryland
Garfield, Anne Marie	Virginia
Heer, Roger G.	Maryland
Hess, Gary L.	Maryland
Hoffman, Ronald H.	Maryland
Johnson, Eugene M.	Maryland
Lehman, Allan G.	Maryland
Lessing, Melvin	Maryland
Lindenbaum, Ronald L.	Maryland
Martin, Lawrence L.	Maryland
Meyer, Howard B.	Maryland
Moore, William C.	Delaware
*Morton, Jacqueline G.	Maryland
Musch, Robert A.	Maryland
Myers, John E.	Maryland
Needel, Stephen	Maryland
Neiner, Joan M.	New Jersey
Pincus, Jack H.	Maryland
§Popov, Metodi	Maryland
Rayman, Marsha J.	District of Columbia
Spuras, Jenina D.	Maryland
Tannenbaum, Stanley B.	Maryland
Taylor, Charles D.	Maryland
Tims, John M.	Maryland
Traska, Alexander W.	Maryland
Via, David M.	Maryland
*Volcjak, Frank J.	Maryland
Weiner, Myron	Maryland
Williams, Matt E.	Maryland

SCHOOL OF PHARMACY AT COLLEGE PARK

Second Year

Alpert, Charles M.	Maryland
Balch, John H.	Maryland
Berglund, Richard L.	Maryland
Blitz, Alvin M.	Maryland
†Bloom, Martin G.	Maryland
Branch, Arthur S.	Maryland
*Buckner, Stephen L.	Maryland
David, Stephen T.	Maryland
†Davidson, Harvey S.	Maryland
†Deneale, Richard J.	Maryland

* First semester only

§ Did not attend entire session.

†Second Semester only.

UNIVERSITY OF MARYLAND

Dondero, David L.	Maryland
§Dubansky, Ronald F.	Maryland
Feldman, Neil	Maryland
†Folus, Gary L.	Maryland
Golob, Jerrold J.	Maryland
*Goodman, Philip L.	Maryland
§Goodman, Richard M.	Maryland
*Grabush, Arnold F.	Maryland
Griffiths, Robert C.	Maryland
Groman, Alvin D.	Maryland
Heer, Ronald W.	Maryland
*Hill, Carol J.	Maryland
Hommerbocker, Barry A.	Maryland
Honkofsky, Arnold J.	Maryland
Jaskulski, Alan J.	Maryland
Kolkhorst, Kenneth A.	Maryland
Kovalsky, Paul V.	Maryland
Lawrence, Barbara J.	Maryland
†Marks, Robert A.	Maryland
McCabe, Stanley B.	Maryland
*Nadell, Terry S.	Maryland
Oliver, Patricia A.	Maryland
*Polievka, Frank J.	District of Columbia
*Ryon, James N.	Maryland
Samios, William A.	Maryland
Sanford, Ronald A.	Maryland
Smith, Earl T.	Maryland
Solomon, Larry P.	Maryland
Stromberger, Henry R.	Maryland
Towers, Earl M.	Maryland
Trinkley, Kenneth P.	Maryland
*Walman, Eugene S.	Maryland
Watson, George W.	Maryland
Will, Marcia A.	Maryland
Wolff, Martin W.	Maryland

SCHOOL OF PHARMACY AT COLLEGE PARK

First Year

§Aghamolla, Diamchid	Maryland
*Barrie, Bernard H.	Maryland
*Blair, Gary S.	Maryland
*Boteler, Charles E.	Maryland
Burkhardt, Charles T.	Maryland
Cummins, Leroy J.	Maryland
Daniel, David J.	Maryland
Davis, David M.	Maryland

*First Semester only.

§Second Semester only

†Did not attend entire Session.

Duvall, Suzanne W.	Maryland
Dyke, Wayne A.	Maryland
§Edelman, Barry A.	Maryland
†Farano, Ralph J.	Maryland
Foxwell, Lurman H.	Maryland
Gaffney, Michael J.	Maryland
*Galliher, Richard H.	Maryland
*Goldstein, Richard C.	Maryland
*Haase, John H.	Maryland
§Hanratty, Eugene J.	Maryland
Hare, David F.	Maryland
†Harmon, George C.	Maryland
*Herbst, Joseph A.	Maryland
*Horwitz, Michael R.	Maryland
§Howard, Leonard C.	Maryland
§Jones, Norman R.	Maryland
Kirson, Alan B.	Maryland
Krawiecki, Elizabeth A.	New York
Lebson, Harvey J.	Maryland
Leister, Dennard L.	Maryland
McConnell, Patricia S.	Maryland
McSwiggin, Sue E.	Maryland
Meadors, Richard C.	Maryland
Motsko, John M.	Maryland
Neuman, Joann L.	Maryland
Newman, Gail D.	Maryland
*Nickel, David W.	Maryland
*Pailthorp, Charles J.	Maryland
Pasman, Arnold K.	Maryland
Polkis, Alphonse	Maryland
Press, Howard A.	District of Columbia
Rand, Jerome A.	Maryland
Rehwaladt, Don C.	Maryland
Ricci, John R.	Maryland
Rosenbluth, Karen S.	Alabama
Savage, Joseph P.	Maryland
†Schall, Arthur B.	Maryland
†Stern, Daniel	Maryland
Thomas, Philip O.	Maryland
VonBergen, Eric W.	Maryland
Wright, Richard T.	Maryland
Yorkilous, John C.	Maryland

ROLL OF GRADUATES, JUNE 8, 1963

Doctor of Philosophy

Dorn, Conrad Peter, Jr.	New Jersey
Havranek, Robert Edward	Missouri

*First Semester only.

§Second Semester only.

†Did not attend entire Session.

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Kokoski, Robert John	Maryland
Kumkumian, Charles Simon	Pennsylvania
Levine, Phillip Julian	Rhode Island
Marlowe, Edward	Pennsylvania
Patel, Vithalbhai Chhotabhai	India

Master of Science

Becker, John W.	Maryland
Block, Ronald Lee	District of Columbia
Fox, Chester David	New York
Richman, Morton David	Maryland
Ringe, Ingrid	New York
Walkling, Walter Douglas	Maryland

Bachelor of Science in Pharmacy

Abel, Walter Howard	Maryland
Abramovitz, Marjorie Sue	Maryland
Adair, Carole Shaver	Maryland
Antwarg, Alvin Gordon	Maryland
Baker, Jeanne Ann	Maryland
Banks, David Edwin	Maryland
Barron, David D.	Maryland
Batt, William Henry	Maryland
Benson, Michael Theodore	Maryland
Blake, David Andrew	Maryland
Bradenbaugh, Don Lloyd	Maryland
Brownstein, Marshall Paul	Maryland
Caplan, Yale Howard	Maryland
Caple, Arthur Norris, Jr.	Maryland
Chang, Gloria	Maryland
Cohen, Michael David	Maryland
Cornias, William N.	Maryland
Fader, John Frederick, II	Maryland
Friedel, Stuart Lee	Maryland
Henderson, Robert Webb	Maryland
Heyman, Irwin Alvin	Maryland
Hopkins, Ronald Murray	Maryland
Jacobs, M. Neal	Maryland
Kadish, Aaron Chaim	Maryland
Keller, Thomas Henry, Jr.	Maryland
Kuchinsky, Victoria Wilhelmina	New Jersey
Levi, Henry Michael	Maryland
Levin, Stephen Paul	Maryland
Mendelsohn, James Frank	Maryland
Pariser, Joseph	Maryland
Patel, Barbara Ann Foster	Pennsylvania
Perzynski, Paul Ronald	Maryland
Pilson, Robert Michael, Jr.	Maryland
Price, Chester Lee	Maryland
Reinke, Budne Charles	Maryland

Ritchie, James Reed	Maryland
Sapperstein, Alan Edward	Maryland
Scholtz, Frank William	Maryland
Schultz, Lawrence Michael	Maryland
Shaner, Daniel Stephen	Maryland
Shargel, Leon David	Maryland
Sobczak, Valentine Raymond	Maryland
Sober, Julian Neal	Maryland
Spak, Allen	Maryland
Tristani, Ettore Mario	Maryland
Ullman, Kenneth Charles	Maryland
Welsh, James Joseph	Maryland
Wilson, John Wesley	Maryland
Winakur, Stuart	Maryland
Woods, Dennis Scott	Maryland
Yee, Susan	Maryland
Zimmer, Reid Austin	Maryland

HONORS (1962-63)

Gold Medal for General Excellence	Marjorie S. Abramovitz
William Simon Memorial Prize (Chemistry)	Marjorie S. Abramovitz
Andrew G. DuMez Medal (Pharmacy)	Yale H. Caplan
L. S. Williams Practical Pharmacy Prize	David A. Blake
Conrad L. Wich Pharmacognosy Prize	Chester L. Price
Wagner Pharmaceutical Jurisprudence Prize	David A. Blake
David Fink Memorial Prize (Pharmacy)	Jeanne A. Baker
Kappa Chapter, Alpha Zeta Omega Prize (Pharmacology)	Stephen P. Levin
Epsilon Alumnae Chapter, Lambda Kappa Sigma Sorority Prize (Pharmacy Administration)	Thomas H. Keller, Jr.
Phi Alpha Chapter, Rho Pi Phi Fraternity Cup (Leadership)	Yale H. Caplan
Merck Award (Pharmacy)	Marjorie S. Abramovitz
Merck Award (Pharmaceutical Chemistry)	Stephen P. Levin
Bristol Laboratories, Inc. Award (Extra Curricular Activities)	David A. Blake
Rexall Drug Company Award (Outstanding Achievement)	Jeanne A. Baker

Certificates of Honor

Jeanne A. Baker

James J. Welsh

Yale H. Caplan

UNIVERSITY OF MARYLAND

DEAN'S MEDALS FOR ACADEMIC EXCELLENCE

(1962-63)

Class of 1963

Marjorie S. Abramovitz
Jeanne A. Baker
David A. Blake
Don L. Bradenbaugh
Marshall P. Brownstein
Yale H. Caplan

Stuart L. Friedel
Stephen P. Levin
Barbara A. Patel
Chester L. Price
Kenneth C. Ullman
James J. Welsh

Stuart Winakur

Honorable Mention

Michael D. Cohen
Irwin A. Heyman
M. Neal Jacobs
James F. Mendelson

Robert M. Pilson, Jr.
Ettore M. Tristani
John W. Wilson
Susan Yee

Class of 1964

Honorable Mention

Richard L. Wynn

Class of 1965

Richard L. Cysyk

Gerald M. Rachanow

Charles J. Schutz

Honorable Mention

Robert P. Brauner
John W. Conrad
Gayle R. Dolecek

Robert W. Hoffman
Ralph M. Sollod
Michael J. Walsh

Cornelius B. Williams

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